

SECTOR 8

WEST COAST OF AFRICA—OFF-LYING ISLANDS

Plan.—This sector describes the islands lying off the W coast of Africa. It commences with the Arquipelago da Madeira, including the Ilhas Selvagens. It then describes the Islas Canarias and the Arquipelago de Cabo Verde. The general descriptive sequence of each group is from the W to E.

The Arquipelago da Madeira

8.1 The Arquipelago da Madeira, also known as the Madeira Islands, lies 345 miles off the coast of Morocco, between the parallels of 32°23'N and 33°08'N, and the meridians of 16°16'W and 17°16'W. The group, an autonomous region of Portugal, consists of the main island of Madeira, the island of Porto Santo, and the three islands which form the Ilhas Desertas.

There are no well-sheltered harbors in these islands, the anchorages being on the open coast. The most important harbors include Funchal, on the S side of Ilha da Madeira, and Baia de Porto Santo, on the S side of Ilha de Porto Santo. The former is the capital of the group and the residence of the civil and military authorities.

The general appearance of these islands is exceedingly picturesque, with elevated peaks separated by large ravines. It may be generally stated that the S coasts of the islands have a gradual slope from the interior to the sea and that the N and W coasts are, with few exceptions, high and bold.

Tides—Currents.—The islands lie in the flow of the SW Canary Current. The current splits at Ilha de Porto Santo and a secondary flow passes N of this island and then along the N shore of Ilha da Madeira. This secondary flow then turns S and E around the W and S shores of Ilha da Madeira until it meets the main SW flow off Punta da Cruz (32°38'N., 16°57'W.). An eddy that sometimes forms here extends up to 4 miles offshore.

Caution.—Submarines, both submerged and surfaced, frequently exercise in the vicinity of these islands.

Ilha da Madeira

8.2 Ilha da Madeira (32°45'N., 17°00'W.), the largest and most important island of the Arquipelago da Madeira, is traversed by a range of mountains which extend from the E to W. Pico Ruivo de Santana, the summit of the island, is located about 2 miles NE of the islands geographical center and rises to a height of 1,861m. This mountain slopes gradually to the sea in a N and NE direction, but on the SW side it falls abruptly. The W end of the island is high, steep, and cliffy, while the E end is low and has a narrow peninsula which extends 4 miles from the coast.

Ponta do Pargo (32°49'N., 17°16'W.), the W extremity of Ilha da Madeira, consists of bold and rocky cliffs which rise steeply from the sea to a height of 283m. A light is shown from a prominent tower, with a dwelling, 14m high, standing on the point and a prominent round-topped hill, 421m high, rises 0.5 mile E of it.

Baixa de Sao Pedro, a rocky patch with a least depth of 16.5m, lies about 1 mile WNW of the point and should be avoided by large vessels, especially in periods of heavy swell.

The coast between Ponta do Pargo and Ponta do Tristao, 5 miles NE, is high and formed of steep cliffs. Rocks, submerged and awash, fringe the shore up to 0.2 mile seaward in places. These cliffs are broken by several prominent mountain torrents, waterfalls, and deep ravines. Above the cliffs, the land rises to a ridge of mountains which stands about 2 miles E of the coast. Several of the peaks along this ridge are over 1,200m high.

Ponta do Tristao, 326m high, is the N extremity of the island. It consists of a bold bluff fronted by rocks. A prominent church stands about 0.7 mile S of this point.

Ilheu Mole (32°52'N., 17°10'W.) lies 1.5 miles ESE of Ponta do Tristao. The coast between is formed by very high rocks fronted by several detached rocks. It is 62m high, yellowish in color with a black lava base, and is connected to the shore by a line of rocks. A light is shown from the highest part of Ilheu Mole and a town is situated on the mainland close SW of it.

Baixas da Moniz, lying 0.5 mile offshore and about 1 mile NW of Ilheu Mole, consists of a cluster of flat rocks up to 3.7m high, with deep water all around.

Vessels can take anchorage, sheltered from SW winds, in a depth of 25m, about 0.3 mile SE of the summit Ilheu Mole, or, in a depth of 37m, clay and coral, about 0.5 mile ESE of the summit.

Ponta Delgada is located 9 miles ESE of Ilheu Mole. The coast between consists of a long bight formed by steep cliffs and fringed by several dangerous rocks. The point consists of a comparatively low projection which is fringed by rocks and has a town standing on its NE side.

During strong N winds, this entire section of coast is pounded by heavy rollers; the sea breaks along the shore and on the outer rocks.

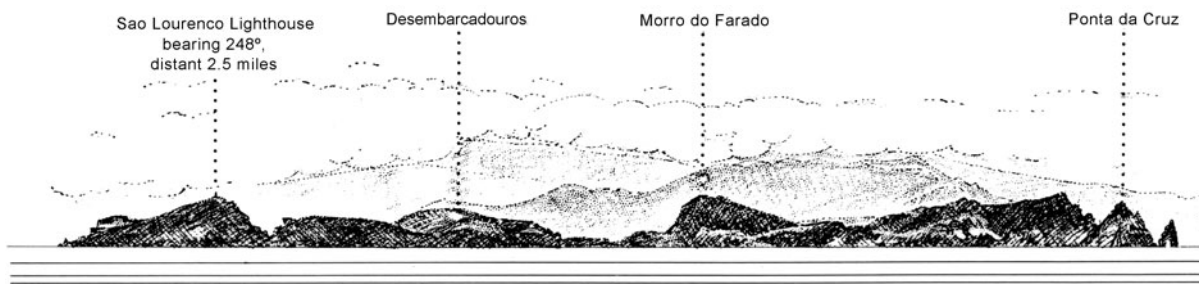
Pico do Arco de Sao Jorge, 826m high, stands 0.7 mile inland, 2 miles ESE of Ponta Delgada. It is very prominent and has a remarkable sharp peak.

8.3 Ponta de Sao Jorge (32°50'N., 16°54'W.), located 4.3 miles E of Ponta Delgada, is a bold and rocky bluff, 213m high. The perpendicular cliffs on both sides of this bluff are dark reddish in color and are fringed by a narrow shingle beach. Several large rocks lie about 1 mile SE of the point.

A light is shown from a round tower, with a dwelling, 14m high, standing close within the point.

Ponta do Clerigo is located 3 miles SE of Ponta de Sao Jorge. The coast between is high, cliffy, and fronted by rocks. Pedrina do Daniel, with a depth of 7.8m, lies about 0.4 mile offshore, 0.9 mile NW of Ponta do Clerigo. A detached patch, with a depth of 48m, lies 2 miles NNW of Ponta do Clerigo.

Baia do Faial is entered between Ponta do Clerigo and Ponta do Serro do Guindaste, 0.9 mile SE. This small bay is only available to boats with local knowledge. It provides a distinctive break in the line of coastal cliffs.



Ilha da Madeira—E extremity

Ilheu do Guindaste, 22m high, lies 0.3 mile NE of Ponta do Serro do Guindaste. This islet is black, cone-shaped, and has an archway through it. The summit is reported to be white from guano.

Porto da Cruz, a small bay, is entered 1.7 miles SE of Ponta do Serro do Guindaste and provides good shelter in SW winds. Its shores are rocky and generally dangerous, except for a landing place situated at the town which stands under the lee of Ponta do Sombreiro, the N entrance point. Ilheu de Porto da Cruz, 46m high, is the largest of a chain of islets and rocks which extend 0.3 mile NE from Ponta do Sombreiro. Baxia de Fora, a reef which dries 1.8m, lies at the outer end of the chain.

Baixa do Porto do Cruz, a rocky shoal with a least depth of 8m, lies 0.7 mile ENE of Ilheu de Porto da Cruz and should be avoided by all vessels in a heavy sea.

Baixa dos Porcos, a rock with a depth of 4.9m, lies in the E part of this bay, about 0.3 mile off the S entrance point.

The land on each side of the bay is high and cliffy; a conspicuous mountain, 590m high with a double peak, stands 0.8 mile W of the town.

Vessels can take anchorage, in a depth of 24m, good holding ground, about 0.5 mile E of Ilheu de Porto da Cruz. Small vessels can anchor, in a depth of 20m, about 0.3 mile ESE of the same islet.

Ponta do Espigao Amarelo is located 2 miles ESE of Porto da Cruz. The cliffs are inaccessible in the vicinity of this point and the land rises to a height of 746m close within the coast.

8.4 Ilheu de Fora (32°44'N., 16°39'W.), located 7 miles ESE of Ponta do Espigao Amarelo, forms the E extremity of Ilha da Madeira. This islet, 107m high, lies at the outer end of a narrow and irregular rocky peninsula, known as Ponta de Sao Lourenco, which extends 4 miles E from the main coast.

A main light (Sao Lourenco) is shown from a tower, with a dwelling, 10m high, at a height of 103m, standing on Ponta de Barlavento, the E extremity of the islet.

Several rocks lie off the SE side of this islet and vessels are advised to stay at least 1 mile from it.

An aeronautical radiobeacon is situated on the N side of the peninsula, 3 miles WNW of Ilheu de Fora.

Ensenada de Machico, a small bay, lies on the S coast of Ilha da Madeira, 5.5 miles WSW of Ilheu de Fora. A prominent fort stands on the N entrance point of this bay.

Ponta de Santa Catarina (32°42'N., 16°46'W.), located 6.3 miles WSW of Ilheu de Fora, lies 1.5 miles SW of Ensenada de

Machico. The point is rounded with low cliffs and a prominent steep rock, 11m high, stands close off it.

An airport is situated close inland of this point; an aeronautical light is shown from its vicinity.

The town of Santa Cruz stands on the N shore of a bay, which is entered close SW of the point. Small vessels can obtain anchorage, in a depth of 57m, about 0.4 mile SE of the town.

Porto Novo, a small shingle bay, lies 2.6 miles SW of Ponta de Santa Catarina. A prominent white building with a chimney stands on the shore of this bay.

Ponta do Garajau (32°38'N., 16°51'W.), located 5.2 miles SW of Ponta de Santa Catarina, is a bold and rocky headland, which is faced by perpendicular reddish-yellow colored cliffs. A narrow hilly ridge stands above the cliffs and is surmounted by a conspicuous statue of Christ. Several prominent radio masts are situated 0.5 mile NW of this point.

Caution.—A submarine cable extends seaward from the vicinity of Port Novo, about 2.7 miles NE of Ponta do Garajau.

Funchal (32°38'N., 16°54'W.)

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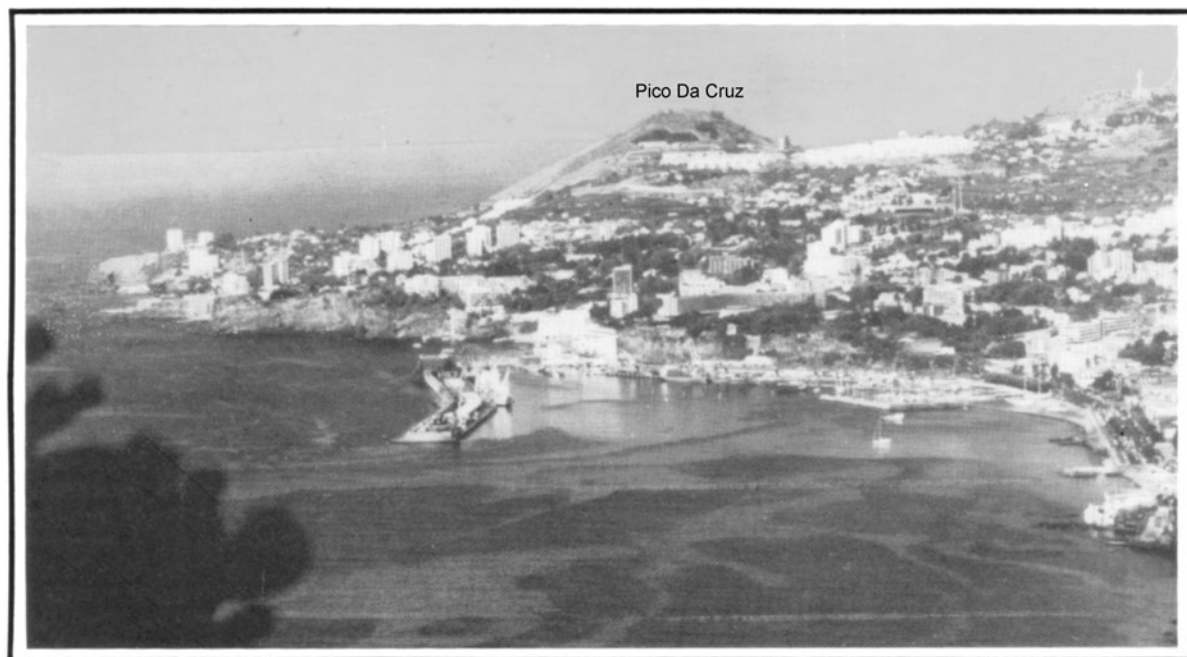
8.5 Porto do Funchal is situated in the bay lying between Ponta do Garajau and Ponta da Cruz, 5 miles W. It is protected from N winds by a series of rocky cliffs which border the shore. Praia Formosa, an open bay, entered 0.5 mile NW of Ponta da Cruz, is the site of the offshore oil terminal.

Winds—Weather.—Winds from the NE predominate throughout the year, although S and SW winds are fairly frequent in the afternoon. In summer, the fresh NE winds are cut off by Ponta do Garajau and the port area is calm or nearly so. In winter, strong SW winds occasionally bring on thick weather, but gales are not frequent even in December, the most likely month. Fog in the vicinity of the port may occur with SW winds in winter, but the frequency is low and visibility usually only partially limited.

Temperatures vary from a mean high of 30°C in August to a mean low of 10°C in January.

Tides—Currents.—Tides rise 2.4m at springs and 1.9m at neaps.

The flood tidal currents run ENE at up to 1.3 knots during springs and 0.5 knot during neaps. The ebb tidal currents run SSW at about the same rates.



Porto do Funchal from E

Depths—Limitations.—Pontinha, situated 1.5 miles ENE of Ponta da Cruz, is an artificial embankment which extends SSE from the shore at the W end of the harbor. A breakwater extends 0.5 mile E from the S end of Pontinha and Berths 1, 2, and 3 are situated along its inner side.

Berth 1 is 200m, long with depths of 6 to 8.5m alongside; Berth 2 is 425m long, with a depth of 11m alongside; and Berth 3, at the outer end, is 347m long, with a depth of 11m alongside.

Berth 4, situated at the W end of the harbor, is 80m long; it has a depth of 2m alongside and is used by fishing vessels.

Berth 5, situated on the N side of the harbor, is 95m long; it has a depth of 6m alongside and is mostly used by local vessels.

Berth 6, situated close NE of Berth 5, is 260m long with a depth of 8m alongside.

General cargo, container, bulk, and passenger vessels up to 302m in length and 11m draft can be accommodated alongside in the harbor.

An extensive marina, situated at the N side of the harbor, can accommodate yachts and pleasure craft up to 15m in length in depths of 3 to 4m.

The offshore tanker terminal at Praia Formosa consists of several mooring buoys surrounding the seaward end of a submarine pipeline which extends N and NE to the shore. It lies in a depth of 13m, about 0.5 mile WNW of Ponta da Cruz, and can accommodate tankers up to 275m in length and 11m draft.

A jetty projects from the shore at Praia da Vitoria, 0.7 mile NW of Praia Formosa, into depths of 7 to 8m; its head is flanked by several mooring buoys and a dolphin.

Aspect.—From a distance seaward, Pico Ruivo de Santana, previously described in paragraph 8.2, is a very good landmark. Pico da Ponta da Cruz, 261m high, stands 0.8 mile NNE of Ponta da Cruz and is a good landmark from closer in.

The church, situated at Nostra Senhora do Monte, 2 miles N of the harbor, and the statue of Christ, standing on Ponta do Garajau, are also both very conspicuous when approaching the port. The town, with its white and yellow buildings, is situated on the hillsides above the harbor and is usually easy to identify.

Conspicuous landmarks include a high chimney standing 0.3 mile S of Forte de Pico and the church at Socorro, close N of Forte de San Tiago, which is white and has a prominent globe-shaped dome.

Prominent landmarks include Forte de Nostra Santa da Conceicao, standing on the breakwater; Forte de Pico, surmounted by a radio mast, standing on a rocky eminence, 0.6 mile N of the root of the breakwater; Forte de San Tiago, standing close to the shore, 0.5 mile NE of the breakwater head; and a chimney standing at a factory, 0.3 mile W of Forte de San Tiago.

Other landmarks reported to be prominent include the Hotel Savoy, standing 0.2 mile NW of the root of the breakwater, which is painted white, but is partly obscured by the Casino Royale; the Sheraton Hotel, a 10-story building, standing 0.2 mile W of the root of the breakwater; and Reid's Hotel, a large yellow six-story building with a red roof, standing 0.3 mile SW of the Hotel Savoy.

A light is shown from a column, 5m high, standing at the head of the breakwater.

Pilotage.—Pilotage is compulsory and is available 24 hours. Pilots can be contacted on VHF channel 14, 16, or 68 and board 1 mile SE of the breakwater head. Vessels should send their ETA 24 hours in advance. The pilot will generally indicate the anchorage berth for an approaching vessel.

Anchorage.—Anchorage may be obtained in four areas, best seen on the chart, designated A, B, C, and D. Area C is the anchorage used for quarantine and dangerous cargo.

Positioning of vessels within these areas is usually under the control of the harbor authorities and pilots. There are no limitations on size for vessels anchoring off the port.

Caution.—Anchorage prohibited areas, the limits of which are shown on the chart, lie close E of the harbor entrance, 1.2 miles E of the breakwater head, in the vicinity of the offshore oil terminal, and in the vicinity of several submarine cables which extend seaward from a point on the shore 0.6 mile E of Ponta da Cruz.

Several abandoned submarine cables lie S of those anchorage areas situated E of the breakwater head, but only exist in depths over 80m.

Prohibited areas, the limits of which are shown on the chart, lie in the vicinity of the offshore tanker terminal and the jetty at Praia da Vitoria.

During winter, vessels may have to shift anchorage or put to sea on the approach of a SW gale.

8.6 Camara de Lobos (32°39'N., 16°59'W.), a small bay, is entered 2 miles NW of Ponta da Cruz and forms an excellent harbor for fishing boats. A quay, marked by a light at the S end, is situated on the W side of the bay, and small craft can anchor, with good shelter, near the head.

Cabo Girao, 575m high, is located 2 miles W of Camara de Lobos. This cape rises in a conspicuous sheer cliff and forms a very good landmark, especially from the E or W. A conspicuous grove of pine trees stands on the high land above this cliff.

Ponta da Ribeira Brava, marked by a light, is located 2.7 miles WNW of Cabo Girao. A small village is situated near a stream, close W of the point.

Ponta do Sol, located 2 miles WNW of Ponta da Ribeira Brava, is a rocky bluff which rises from the sea in steps. A fairly steep cliff rises from the sea 0.7 mile E of the point. It is somewhat higher than the point and can easily be mistaken for it on some bearings.

Ponta da Gale, located 5 miles NW of Ponta do Sol, is formed by flat rocks which consist of black basalt. A large prominent building stands on the rocks above a cliff, close E of the point.

The prominent cascade of Ribeira Funda is located 0.8 mile NW of Ponta da Gale.

Ponta do Jardim do Mar is located 1.5 miles NW of Ponta da Gale and a small village, with a prominent chapel, stands on its summit.

8.7 Paul do Mar (32°45'N., 17°13'W.), a small town, stands along the shore, 1.3 miles NW of Ponta do Jardim do Mar. The land rises rapidly behind the town, but the beach area extends NW for nearly 1 mile before the cliffs again close to the sea. A light is shown from a column on a building, 12m high, at the E end of the town.

Baixas dos Carricos, consisting of several dangerous submerged rocks, extends up to 0.5 mile offshore, 0.7 mile WNW of the light.

Ponta da Faja da Ovelha, located 1.7 miles NW of Paul do Mar, is formed by steep cliffs and is fronted by rocks. A prominent chapel stands high above these cliffs.

Ponta do Pargo, previously described in paragraph 8.2, is located 2.5 miles NNW of Ponta da Faja da Ovelha.

Ilha de Porto Santo

8.8 Ilha de Porto Santo (33°05'N., 16°20'W.), the NE island of the Arquipelago da Madeira, is high and mountainous in its NE part, considerably hilly at its SW end, and generally flat in its central portion. Pico do Facho, 516m high, is the summit of the island and rises 1.5 miles S of Ponta da Cruz, the N extremity of the island. It is reported (1993) that a radio mast stands on this summit.

In general, the N and W coasts of the island are faced with bold, high, and rocky cliffs. They are inaccessible from the sea and are fronted by numerous rocks. However, the SE coast slopes and terminates in a long, white sandy beach for nearly its full length. The entire island is nearly devoid of trees and an international airport is situated on the flat land near the central plateau.

Ponta da Cruz (33°06'N., 16°19'W.), the N extremity of the island, is formed by a narrow point which terminates in cliffs, 50m high. A crescent-shaped rock fronts the point and Islote dos Barbeiros, a small islet, lies close NNW of it.

Ponta de Nordeste, located 1.5 miles ESE of Ponta da Cruz, is the NE extremity of the island. It consists of a bold promontory formed by a series of cliffs. The land SW of the point rises steeply to Pico Branco, 450m high, which stands 0.5 mile inland. This peak is an excellent landmark when viewed from the NW or SE. The coast between Ponta de Nordeste and Ponta da Cruz is formed by bold cliffs which are fronted by numerous submerged rocks.

Ponta dos Ferreiro, a steep point, is located 1.5 miles SSE of Ponta de Nordeste. Baixa do Cotrim, a small above-water rock, lies close SE of this point.

Ponta do Incao, the SE extremity of the island, is located 2.5 miles S of Ponta de Nordeste. It terminates in a low rocky spur which is closely backed by Pico de Baixo, a steep and cliffy hill, which rises to a height of 211m.

Ilheu de Cima (33°03'N., 16°17'W.) is separated from Ponta do Incao by a narrow and foul channel. The island, 121m high, is bare, nearly flat, and steep-to on its seaward sides.

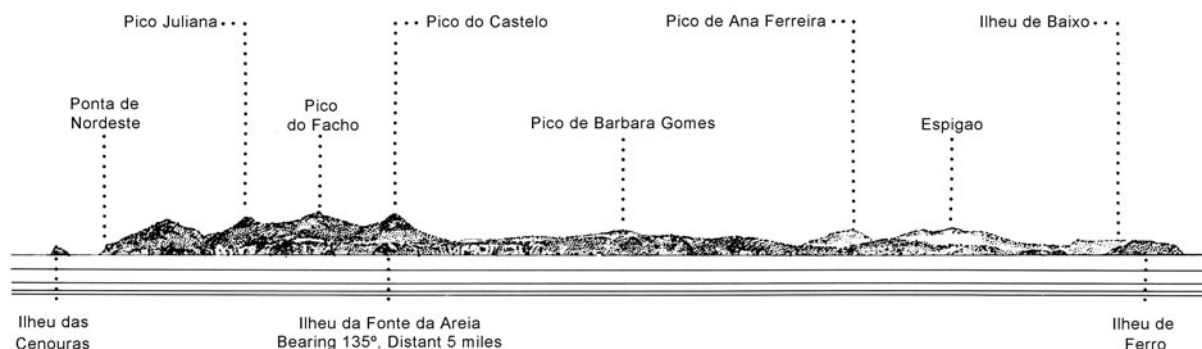
A main light is shown from a prominent tower, with a dwelling, 15m high, standing on the NE part of the island. An aeronautical radiobeacon is situated at the light.

A depth of 14.5m has been reported to lie about 0.3 mile S of the light.

Ponta da Calheta, the S extremity of the island, is located 5.2 miles WNW of Ilheu de Cima. Pico do Ana Ferreira, 283m high, stands 1.2 miles NNE of this point and has a remarkable summit which resembles a column.

Ilheu de Baixo is separated from Ponta da Calheta by a foul channel, 0.2 mile wide, which is used by boats in good weather. This small island is bordered by high, rocky cliffs and is steep-to except at its N end. Limestone abounds on this island and barges are sometimes seen loading it at a cove which lies along the W side. A shoal patch, with a depth of 7.7m, lies about 0.7 mile NE of the S extremity of this island.

8.9 Baia de Porto Santo (33°03'N., 16°20'W.) (World Port Index No. 38135) lies between Ilheu de Cima and Ilheu de Baixo, 6 miles SW, and provides fair shelter in moderate weather. The town of Porto Santo, formerly known as Vila Baleira, stands near the middle of the bay and is the capital of



Ilha de Porto Santo from NW

the island. Porto Santo, a small harbor, is situated 1.7 miles WNW of Ilheu de Cima.

Tides—Currents.—Tides rise 2.5m at springs and 1.9m at neaps.

Depths—Limitations.—The main facilities include a quay, on the N side of the South Mole, which is 300m long and has depths of 6.1 to 7.8m alongside, and a secondary quay, on the E side of the North Mole, which is 200m long, with depths of 2.7 to 4.5m alongside. The cement berth, located close N of the elbow of the South Mole, consists of two mooring dolphins, with alongside depths of 6.1 to 6.7m.

A marina is situated in the NW part of the harbor and a short pier extends from a point on the shore, 1 mile W of the harbor entrance. A submarine pipeline extends 0.5 mile S from a point on the shore of the bay, 0.4 mile W of the harbor entrance.

Another submarine oil pipeline extends 0.3 mile SSE from the S side of the S breakwater. Several mooring buoys lie off its seaward end and form an offshore terminal berth.

Pilotage.—Pilotage is available. The harbor may be contacted on VHF channel 6, 11, or 16. Pilots are provided from Funchal and require advance notice.

Aspect.—The harbor is protected by two breakwaters, from which lights are shown.

Several prominent oil tanks stand in the vicinity of the root of the submarine oil pipeline which extends S from the shore of the bay. A prominent television mast stands 0.4 mile N of the root of the W breakwater.

An aeronautical radiobeacon is situated in the vicinity of the airport, 2 miles W of the harbor.

Anchorage.—Designated anchorage areas lie within the bay and the local authorities should be contacted. Large vessels should anchor, in a depth of 35m, about 1 mile S of the town. Care is necessary when anchoring as the depths fall off rapidly to over 200m, about 1.5 miles S of the town.

8.10 Ponta da Canavieira (33°02'N., 16°24'W.), located 1.3 miles NW of Ponta da Calheta, is the W extremity of Ilha de Porto Santo. The point is much lower than the adjacent cliffs which rise to a height of 270m.

Ilheu de Ferro (33°02'N., 16°25'W.) is separated from Ponta da Canavieira by a channel, 300m wide. It has a coastline of rocky and inaccessible cliffs and rises to a height of 115m. The W coast is steep-to and depths of over 100m lie only 0.7 mile offshore.

A light is shown from a tower, with a dwelling, 14m high, standing on the summit of this island.

The coast from Ponta da Canavieira trends 6 miles NE to Ponta da Cruz, which has been previously described in paragraph 8.8. It is faced by cliffs and fronted by rocky ledges which extend up to 0.3 mile offshore.

Caution.—Baixo de NW (Noroeste), with a least depth of 8m, lies near the N end of a bank, with depths of 31 to 50m, which extends 6.5 miles NW of Ponta da Cruz. This steep-to shoal has been reported to break heavily in bad weather.

Ilheu da Fonte da Areia, 79m high, lies 2.5 miles W of Ponta da Cruz. This islet consists of a black-colored basaltic structure.

Baixo de NE (Nordeste), with a least depth of 22m, lies 2.5 miles NE of Ponta da Cruz and breaks occasionally.

Ilheu de Fora, 98m high, is located 2.3 miles ENE of Ponta da Cruz and is the northernmost of three islets which lie off the NE end of Ilha de Porto Santo. It is thickly wooded, with a peak at the center.

Baixo do Meio lies 0.7 mile S of Ilheu de Fora. This small islet is 12m high and consists of a group of rocks with a few trees on them. Ilheu das Cenouras, 109m high, lies 0.7 mile S of Baixo do Meio. It is composed of rocky cliffs covered with trees. These islets are separated from one another and from Ilha de Porto Santo by navigable channels which may be used by small vessels with local knowledge.

The Ilhas Desertas

8.11 The Ilhas Desertas (32°33'N., 16°31'W.) are a group of three islands, the N extremity of which lies 10 miles SE of the E end of Ilha da Madeira. These islands, which are composed of basalt and other volcanic rocks, extend over a total length of 12 miles, rise to a maximum height of 478m, and are generally steep-to.



The Ilhas Desertas

There are no permanent inhabitants on the islands, but there are goats, rabbits, and numerous puffins. It has been reported that the islands are part of a protected nature reserve and navigation is prohibited within the 100m depth contour surrounding them.

Ilheu Chao (32°35'N., 16°33'W.), the N island, is bare, table-topped, and bordered by high rocky cliffs.

La Testa, the N extremity of the island, consists of a bold bluff, 98m high. It is fronted by rocks, some awash, which extend up to 0.2 mile seaward.

A light is shown from a tower, with a dwelling, 14m high, standing on the edge of this bluff.

Farilhao, 49m high, is a remarkable column of basalt which stands close N of La Testa.

The S end of this island terminates in a narrow point from which rocks extend to Ilha Deserta Grande, leaving only a narrow boat passage.

8.12 Ilha Deserta Grande (32°32'N., 16°31'W.) is the largest and highest of the Ilhas Desertas. A double ridge of hills, with an extensive valley between them, extends N to the N extremity of the island from a hill, 442m high, which stands close N of the center of the island.

The summit of the island, 478m high, stands near the center and a continuous ridge of rocky hills extends S from it to the S extremity of the island.

The general character of the E coast is that of a rugged, broken, and irregular line of cliffs with occasional landslips. The W coast consists of high, broken cliffs with occasional large fragments at their bases.

Ponta do Pedregal, the W extremity of the island, is fringed with reef and rocks.

Ponta do Tabaqueiro, the S extremity of the island, is formed by the S limit of a rocky ridge. An islet lies close W of this point; a rock, awash, lies close off its W side.

Ilha Bugio (32°26'N., 16°29'W.), the S island of the Ilhas Desertas, is 348m high and surmounted by a sharp, rocky ridge of hills which extends over the entire length. It is separated from Ilha Deserta Grande by a deep and clear passage, 0.7 mile wide. It was reported (1986) that a depth of 14m (existence doubtful) lies in the middle of this passage.

A gap located near the center of Ilha Bugio gives it the appearance of being two separate islands when seen from a distance.

A light is shown from a prominent tower, 8m high, standing close within Ponta da Agulha, the S extremity of the island.

The Ilhas Selvagens

8.13 The Ilhas Selvagens (Salvage Islands) (30°09'N., 15°52'W.) lie 155 miles S of Ilha da Madeira and consist of two small but distinct groups of islands and rocks which are separated by a deep channel, 8.5 miles wide.

The NE group is composed of Ilha Selvagem Grande and two off-lying rocky islets. The SW group is composed of Ilha Selvagem Pequena and Ilheu de Fora, together with several rocky islets and reefs.

The islands are privately owned and permission for landing, which is rarely granted on this bird sanctuary, must be obtained through the Portugese Embassy in Madeira. It has been reported that these islands are part of a protected nature reserve and navigation is prohibited within the 200m depth contour surrounding them.

Ilha Selvagem Grande (30°09'N., 15°52'W.), the largest of the Ilhas Selvagens, is volcanic in origin and consists of basalt, lava, and breccia.

The two most conspicuous peaks are Pico da Atalaia, 153m high, standing in the SW part of the island, and Pico dos Tornozeiros, 135m high, standing at the E side of the island. It is reported that three upright stones stand on the highest point of Pico dos Tornozeiros and resemble human figures when seen from a distance.

A main light is shown from a tower, 10m high, standing on the summit of Pico da Atalaia.

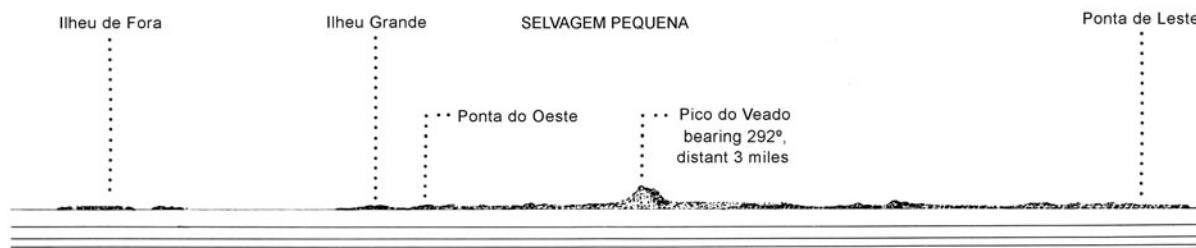
The island is bordered by steep or perpendicular cliffs, 38 to 122m high, which are practically sheer to the water's edge except on the S coast where, although higher, they have a more gradual slope. On approaching the coast, the island appears at a distance to be completely barren, but on closer presentation, it seems to be lightly covered with vegetation in places.

Ponta da Atalaia, the SW extremity of Ilha Selvagem Grande, is fringed by a reef which is reported to break in bad weather. The W side of the island is mostly bordered by reefs and Ilheu Preto, 12m high, lies on a coastal reef about 100m offshore, 0.3 mile SSW of Ponta do Risco, the NW extremity of the island.

Enseada das Cagarras, a small bay, is entered close ESE of Ponta da Atalaia and has a landing place at its head.

Pico do Inferno, a cliff summit, stands on the S coast of the island, 0.6 mile ESE of Ponta da Atalaia. It is 106m high, rises almost perpendicular, and is very prominent from seaward.

Anchorage.—During NE winds, fair anchorage may be obtained in two positions off the S coast of Ilha Selvagem Grande. The E berth lies in a depth of 20m, coral and shells,



Ilha Selvagem Pequena

about 0.3 mile S of Pico do Inferno. The W berth lies in a depth of 27m, about 0.4 mile SW of Ponta da Atalaia.

Small vessels with local knowledge can also take anchorage, in a depth of 13m, in the middle of the entrance to Ensenada das Cagarras.

Caution.—Numerous dangers, many of which are steep-to, lie within the vicinity of Ilha Selvagem Grande. Caution is necessary when approaching the island, especially from the NE, as dangerous shoals lie up to 1.5 miles seaward in that direction. The S side of the island is clear to within a distance of about 0.5 mile.

Baixa de Sao Joao, with a least depth of 2.4m, lies about 1.3 miles NNE of Ponta do Corgo da Areia, the N extremity of Ilha Selvagem Grande. This shoal is most dangerous because it is very steep-to and does not break except in bad weather.

Baixa do Nordeste, with a least depth of 5.8m, and Baixa da Ponta Espinha, awash, lie about 1.2 miles ENE and 0.5 mile E, respectively, of Ponta do Corgo da Areia. Only small vessels, with local knowledge, should attempt to pass between these dangers.

Palheiro de Terra, 23m high, and Palheiro do Mar, 12m high, are two rocky islets fringed by rocks and reefs, which lie 0.5 mile NW and 0.8 mile WNW, respectively, of Ponta do Risco. Baixa do Norte, a rock with a depth of 1.6m, lies 0.2 mile N of Palheiro do Terra and breaks.

Baixa de Noroeste, with a depth of 2.7m, lies about 0.5 mile WSW of Ponta do Risco and is steep-to and dangerous.

Baixa de Oeste, awash, lies 0.8 mile W of Ponta da Atalaia and is steep-to on the NE side.

Baixa da Joana, with a depth of less than 1.8m, lies about 0.5 mile SE of Ponta da Atalaia. This shoal breaks heavily in S winds and depths of 7 to 11m lie up to 0.4 mile W of it.

8.14 Ilha Selvagem Pequena (30°02'N., 16°01'W.), also known as Great Piton Island, lies 10 miles SW of Ilha Selvagem Grande. It has a low rocky coast which is faced, in many places, with steep beaches of pebbles or gravel. The interior consists mostly of sand hills slightly covered with vegetation.

Pico do Veadro, 49m high, stands at the N end of the island. The summit is conical and from all directions it is the most conspicuous feature of this group. A light is shown from a column, 1m high, standing on this summit.

Baixa Comprida, awash, and a rocky shoal, with a depth of 9m, lie about 1 mile SSW and 1.2 miles NE, respectively, of Pico do Veadro. The former rock is the S danger of the group.

On the reefs, which extend from the island, are a number of rocky islets, up to 9m high, which are considered to be points. Ponta de Leste, a small islet, lies 0.7 mile ESE of Pico do Veadro and is considered to be the E extremity of the island. Ponta do Oeste, another small islet, lies 0.4 mile W of Pico do Veadro and is considered to be the W extremity.

Ilheu Pequeno, Ilheu do Sul, and Ilheu Grande are three low islets which lie up to 0.5 mile SW of the SW side of the island.

Fairly sheltered anchorage can be taken, in a depth of 30m, coral and shell, about 0.6 mile SSE of Pico do Veadro.

Ilheu de Fora (30°02'N., 16°03'W.) lies 1 mile W of Ilha Selvagem Pequena. Canal da Selvagem Pequena, 0.5 mile wide, passes between these two islands and has depths of 9 to 11m. Ilheu de Fora has a sandy undulating surface and is mostly surrounded by reefs and rocks. A small rocky summit, 17m high, stands at its NW end and is quite prominent.

Restinga do Ilheu de Fora, which extends about 2 miles N of the island, is formed by a chain of small islets, rocks, reefs, and shoals. Ilheu Alto and Ilheu Comprido, both 7m high, lie 0.4 mile and 0.8 mile, respectively, N of Ilheu de Fora and are the highest islets of the chain. The others are 2 to 4m high. A shoal, with a depth of 10.5m, lies about 0.8 mile NE of the N end of the chain. During heavy weather, the sea breaks over all these dangers. Vessels can obtain anchorage, in a depth of 38m, about 0.7 mile SW of the W summit of Ilheu de Fora.

These islands are uninhabited. Landing is difficult especially during the NE trades when the S shore can sometimes only be approached at LW.

Seamounts

8.15 A chain of seamounts extends from the Arquipelago da Madeira in a NE direction towards Cabo de Sao Vicente. Recent examinations have indicated that shoal water of varying degrees exists in their vicinity. Although most vessels will find little difficulty in transiting this area, large deep-draft vessels are advised to exercise caution.

Seine Seamount (33°45'N., 14°22'W.) lies about 110 miles ENE of Ilha de Porto Santo. It is several miles in extent and has a least known depth of 86m.

Ampere Seamount (35°00'N., 12°48'W.), with a least known depth of 40m, lies about 210 miles NE of Ilha de Porto Santo and should be avoided by large vessels. This seamount is fairly extensive and appears to have two peaks NW and SE of each other.

Gettysburg Seamount (36°30'N., 11°35'W.) lies about 318 miles NE of Ilha de Porto Santo. It is reported to be about 5 miles in extent and has a least known depth of 20.5m (1983).

Ormonde Seamount, with a least depth of 27.5m, lies about 26 miles ENE of Gettysburg Seamount.

Several other seamounts and shallow depths have been reported in these areas, but the existence of some of them is doubtful. The latest charts and Notice to Mariners should be consulted.

The Islas Canarias

8.16 The Islas Canarias, also known as the Canary Islands, are a province of Spain. They form an archipelago which consists of seven principal islands and extends in an E-W direction for over 240 miles. The E island of the archipelago is located approximately 55 miles WNW of Cabo Juby, the NW extremity of Africa; a clear channel lies between.

Isla de Tenerife and Isla de Gran Canaria are considered to be the most important of these islands and provide the main seaports, an international airport, and the largest tourist trade.

The islands are generally high with lofty volcanic peaks, some of which attain heights great enough to be snow covered for a considerable part of the year.

La Palma, the NW island, rises to Caldera de Taburiente, the famous crater. It is the biggest crater in the world, measuring approximately 9,000m in diameter and having a maximum depth of 707m.

Pico de Teide, the highest mountain in the archipelago, rises to a height of 3,718m near the middle of Isla de Tenerife and presents an imposing appearance in clear weather.

The coasts of these islands are mostly cliffy and are only occasionally broken by bays or sandy beaches. They afford little shelter in strong winds except at Santa Cruz de Tenerife, Santa Cruz de la Palma, and Puerto de la Luz (Las Palmas) at Isla de Gran Canaria. All of the channels between the islands are safe and clear.

Generally, the lee side of these islands offers calms which extend 15 to 30 miles offshore; however, in bad weather, local squalls may be experienced which come on with little warning.

Caution.—Local magnetic anomalies have been reported in the vicinity of the archipelago.

Isla de La Palma

8.17 Isla de La Palma (28°40'N., 17°52'W.), the NW island of the Islas Canarias, is very high and is shaped like a wedge with its base at the N end.

Two mountain ranges rise in the N part of the island. One of these extends SSW to the W coast and the other traverses the island, from N to S, and forms a narrow ridge which terminates at the S extremity of the island in several conical volcanic peaks. The main crest in the N part of the island terminates in three lofty peaks which stand near Caldera de Taburiente, previously described above in paragraph 8.16. Roque de los Muchachos, 2,423m high, is the highest. The mountains are usually capped with snow and their sides are well-wooded.

The coasts of La Palma are generally safe to approach as the few rocks, which lie off the points, are located mostly near the shore. The N and NW coasts are formed by high cliffs and the

E and SW coasts consist of several bluffs with beaches between them.

La Palma is reported to be more subject to W winds and rain than any other island in the archipelago; in addition, it is frequently enveloped in fog.

Punta de Fuencaliente (28°27'N., 17°50'W.), the S extremity of the island, is rocky and steep-to. Monte del Viento, a prominent hill, rises near the coast, 1.5 miles NNE of the point. It is 237m high and a pillar stands on the summit. Volcan San Antonio, 656m high, stands 1.7 miles NNW of the point and is the most prominent feature in the S part of the island. It has a truncated cone of volcanic ash and a pillar surmounts the summit.

A main light is shown from a tower, with a dwelling, 24m high, standing on Punta de Fuencaliente.

8.18 Santa Cruz de la Palma (28°40'N., 17°45'W.) (World Port Index No. 38150), a small port, lies in a bay, 14.5 miles NNE of Punta de Fuencaliente. This bay is entered between Punta de San Carlos and Punta Santa Catalina, 1.5 miles N.

Tides—Currents.—Tides rise 2.2m at springs and 1.7m at neaps.

Depth—Limitations.—The harbor is formed by a breakwater which extends about 800m SSE from a point fronting the town, 0.5 mile SW of Punta Santa Catalina. There are berths alongside the inner side of this breakwater with depths of 8m at its center and 20m at its outer extremity. Muelle de Ribera, in the N part of the harbor, has 337m of total berthing space with a depth of 6m alongside. There are facilities for container, ro-ro, and tanker vessels. It is reported (1992) that vessels up to 33,800 dwt, 199m in length, and 8.5m draft have been accommodated.

Aspect.—When approaching the port, the first landmarks to be seen are Risco de la Concepcion, a 354m high hill standing at the head of the bay, and the buildings of the town situated on the N shore.

An airport is situated close inland of Punta Ganado, 2.3 miles S of Punta de San Carlos, and a conspicuous radio mast stands close SW of the point.

The military barracks stand close W of Punta de San Carlos and are prominent. Several oil tanks stand 0.4 mile NW of Punta de San Carlos and are conspicuous. A conspicuous hotel is reported to stand close NNW of these tanks.

A light is shown from a structure, 12m high, standing on the head of the breakwater.

Pilotage.—Pilotage is compulsory for vessels over 50 grt. Pilots may be contacted on VHF channel 4 or 16 and generally board about 1 mile E of the head of the breakwater. Vessels should send an ETA 48 hours and 24 hours in advance of arrival.

Anchorage.—Vessels may anchor, in a depth of 30m, about 0.3 mile SSE of the head of the breakwater. This roadstead is sheltered from winds from the S through W to N.

Caution.—A considerable surge is occasionally experienced when sea conditions off the NW extremity of the island induce heavy swells to sweep into the harbor from the SE.

El Caldereto, a sudden W wind of hurricane force, occurs occasionally during periods of calms when winds veer from

SW to NW. A particularly overcast NW sky can signal its approach.

An area, within which submarine obstructions exist, lies along the shore of in the SW part of the harbor and may best be seen on the chart.

8.19 Punta Cumplida (28°50'N., 17°47'W.), the NE extremity of the island, is located 10 miles N of Santa Cruz de la Palma. It is steep-to and five high hills, which are conspicuous from N, stand above the point.

A light is shown from a tower with a dwelling, 34m high, standing on the point.

Punta Gaviota, a small promontory, is located 1.5 miles WNW of Punta Cumplida. Rocas Topaciegos, a group of drying rocks, lies 200m offshore, about 0.7 mile W of this point.

Punta del Mudo, the N extremity of the island, is located 7.2 miles W of Punta Cumplida and El Roque lies close NW of it. This point is formed by an isolated ridge which rises to a height of about 500m. Roca Manga, a small islet, lies close to the shore, 1.1 miles ESE of Punta del Mudo.

Roca de Santo Domingo, 37m high, lies 100m off a point, 2.7 miles SW of Punta del Mudo. Two other rocks, slightly lower, lie within the bight entered close E of this rock.

Punta Gorda, the W extremity of the island, is located 6.4 miles SW of Punta del Mudo and consists of sheer cliffs, 320m high. Punta de las Llanadas is located 1.7 miles S of Punta Gorda and is fronted by foul ground which extends up to 0.3 mile offshore. The coast between is fringed by rocks.

Tazacorte (28°38'N., 17°56'W.), a small town, stands on a rocky plateau, 9 miles SSE of Punta Gorda. It is fronted by a small fishing harbor, protected by two breakwaters, and can be easily recognized from seaward as it is situated on the S side of a deep ravine, known as Barranco de las Angustias.

The best anchorage berth on the N and W sides of the island lies off Tazacorte. Anchorage may be obtained, in a depth of 30m, sand, about 0.5 mile from the shore, WNW of the town; it has good holding ground but is completely open to W winds.

Rocas Gabaseras, three above-water rocks, lie on a reef which extends 0.3 mile offshore, 0.4 mile S of Tazacorte.

Punta de El Grajado, a rocky promontory, is located 3 miles SSE of Tazacorte. Rocas del Becerro lie close off this point.

Punta de Lava, located 0.6 mile NW of Punta de El Grajado and marked by a light, is a prominent headland which was formed by lava from an eruption in 1949.

Puerto Naos, a small fishing village, is situated at the head of a bay which is entered close SSE of Punta de El Grajado. From here, the coast trends 9.5 miles SSE to Punta de Fuencaliente.

Isla de Hierro

8.20 Isla de Hierro (27°45'N., 18°00'W.), the SW island of the Islas Canarias, lies 37 miles S of Isla de La Palma. It is the smallest of the seven principal islands which form the archipelago.

The shores of the island are almost inaccessible and a well-wooded plateau, rising to a height of 1,501m, is located in the middle. Valverde, the capital of the island, stands on a plain, 1.5 miles from the coast in the NE part of the island. It is surrounded by high peaks.

Puerto de la Estaca (Hierro) (27°47'N., 17°54'W.), a small town, is situated at the N end of a sandy bight, 1.5 miles SSW of Punta Caleta, the E extremity of the island. A prominent islet lies close off the N entrance point of the bight and Roca Anegada, with a depth of 1.4m, lies about 0.4 mile E of it.

A pier, about 200m long, extends S from the town. It has depths of 10m alongside the seaward end and 4m near the root. Anchorage can be taken, in a depth of 9m, at the head of the bight and close offshore; however, caution is necessary as the depths increase rapidly to seaward.

Range lights lead into the harbor.

Punta Restinga (27°38'N., 17°59'W.), the S extremity of Hierro, is high and inaccessible. A small fishing harbor, protected by a breakwater, is situated near the point.

A depth of 5.4m is reported to lie about 1.5 miles SW of the point.

Punta Orchilla (27°43'N., 18°09'W.), the W extremity of the island, is located 10.8 miles NW of Punta Restinga. A main light is shown from a tower, with a dwelling, 25m high, standing on the SE part of the point.

Between Punta Orchilla and Punta de la Dehesa, 4 miles NNE, the coast is high and cliffy. Roca del Bajo, above-water, lies about 0.3 mile offshore, midway between these two points. Roca del Bulto, surrounded by a reef, lies about 0.2 mile NNE of Roca del Bajo.

El Golfo, a bight on the NW side of the island, lies between Punta de la Dehesa and Punta de Salmor, 8.5 miles NE. The shore of this bight is formed by a continuous line of high cliffs with numerous rocks, above and below-water, at the base. Roques de Salmor, a group of small islets, extends up to 0.7 mile W of Punta de Salmor and are fringed by foul ground.

Punta del Norte, the N extremity of Hierro, is located 4.2 miles ENE of Roques de Salmor and 4.1 miles NNW of Puerto de la Estaca. It is high, rocky, inaccessible, and fronted by numerous rocks.

Isla de La Gomera

8.21 Isla de La Gomera (28°06'N., 17°14'W.) lies 34 miles NE of Isla de Hierro and 31 miles SE of Isla de La Palma. This island is circular; its coast consists of rugged, perpendicular cliffs with a few sandy beaches.

Near the coast, the mountains rise to heights of about 600m; however, near the center of the island, Alto Garajonay rises to a height of 1,487m above a plateau.

Punta del Organo (28°13'N., 17°15'W.), the N extremity of La Gomera, is high and steep-to. A deep ravine terminates at the shore, 1 mile SE of the point.

Fondeadero de Hermigua, lying 5 miles ESE of Punta del Organo, is approached between Punta de Agulo and Punta Gabina, 1.6 miles SE. This bight provides shelter from SE winds and vessels can anchor, in depths of 15 to 20m, sand, up to 0.5 mile off the beach at the head of the bight.

Punta Llano, located 10 miles SE of Punta del Organo, is low, sandy, and fronted by reefs.

Punta de San Cristobal (28°06'N., 17°06'W.), the E extremity of Isla de La Gomera, is located 1.9 miles S of Punta Llano and is steep-sided. A light is shown from a tower, 15m high, standing on the point.

Roca Bermeja (Avalo), awash at LW, lies about 0.3 mile offshore, 1 mile N of the point. The sea usually breaks over this rock which is the outermost danger off this part of the coast.

8.22 San Sebastian de la Gomera (28°05'N., 17°06'W.), a small town, is situated at the head of a bay, lying 0.7 mile SW of Punta de San Cristobal. The bay is entered between La Gila, a narrow and rocky point, 0.5 mile SW of Punta de San Cristobal, and Los Garanones, another rocky point, 0.5 mile SW. A white monument, 18m high, stands 0.3 mile W of Los Garanones and is conspicuous.

Depths in the approach decrease gradually toward the beach at the head of the bay. A mole, 225m long, extends SSW from near the N entrance point. It has a quay on the W side, with depths of 4 to 10m alongside, which is used by ferries and coasters. The entrance, which has depths of 13 to 27m, is indicated by a lighted range. Pilotage is available. The pilots monitor VHF channel 16. Vessels should send an ETA 48 hours and 24 hours in advance of arrival. The pilot boards 1 mile E of the main breakwater light. Anchorage, with local knowledge, can be obtained within the bay, but vessels must stay clear of a ferry which swings upon entering.

Caution.—The range markers are located at the base of a cliff and are not very conspicuous; the lights are weak and are not easily seen against the background of other lights.

Punta Gorda, located 3.5 miles SW of Punta de San Cristobal, is formed by a prominent cliffy, steep-to projection which falls to sandy beaches on each side.

The coast between this point and Cabo Gaviota, 1.8 miles SW, remains fairly steep-to, but several above-water rocks lie close offshore.

Punta del Espino (28°01'N., 17°12'W.), located 1.7 miles WSW of Cabo Gaviota, is formed by low cliffs and has a sandy bay on its E side. A shoal, with a depth of 4.6m, extends up to 200m seaward, close W of the point.

Playa de Santiago, a small town, is situated 0.5 mile NE of Punta del Espino. It is fronted by a small fishing harbor which is protected by a breakwater.

8.23 Punta Becerro (28°01'N., 17°15'W.), the S extremity of Isla de La Gomera, is formed by steep cliffs, 150m high. A prominent mountain, 761m high, stands 2.3 miles N of the point and a village is situated on its N slope. Small vessels can anchor, in depths of 13 to 20m, sand, in a small bay which is entered 0.6 mile ENE of the point.

The coast trends 4.7 miles WNW from Punta Becerro to Punta Iguala and remains high and cliffy. Several ravines penetrate this section of the coast and a few fishing stations are situated along the shore. Roca Iguala, which is prominent, lies close off Punta Iguala.

Punta Calera (28°06'N., 17°21'W.), the W extremity of Isla de La Gomera, is located 2.5 miles NW of Punta Iguala. It is low and rocky and dominated by Risco de la Calera, which rises to a height of 604m.

The town of Valle Gran Rey is situated close E of this point, at the termination of a large and deep ravine.

Fondeadero del Valle Gran Rey lies between Punta Calera and Punta Tringo, 1.2 mile SSE, and provides shelter from all E winds. Vessels with local knowledge can anchor, in depths of

10 to 20m, about 0.2 mile offshore, 0.6 mile SE of Punta Calera. A wharf used by boats is situated at the head of the bay and is protected by a breakwater.

The NW shore of La Gomera N of Punta Calera is high, rocky, sheer, and mostly inaccessible. Numerous rocks lie close offshore and in the vicinity of Punta del Peligro, the NW extremity of the island; several dangers lie up to 0.3 mile seaward. The coast continues ENE for 3.2 miles from Punta del Peligro to Punta del Organo and is sheer and inaccessible.

Isla de Tenerife

8.24 Isla de Tenerife (28°10'N., 16°36'W.) lies 15 miles E of Isla de La Gomera and is the largest and most important of the Islas Canarias. The central part of the island is traversed nearly the whole of its length by a high range of mountains that slope steeply towards the sea. Forests and brushwood cover parts of the higher ground and vegetation abounds in some of the valleys and slopes.

Pico de Teide, also known as the Peak of Tenerife, stands in the center of the island. This famous mountain rises to a height of 3,718m and is snow-capped for the greater part of the year. The cone of this mountain is very small in proportion. It is only 163m high and the crater at the top is only 39m deep.



Pico de Teide, distant 6 miles

The coasts of the island are mostly bold and steep-to; except for a few reefs extending from some points, all of the dangers are visible and lie close inshore. The SW side is formed of high cliffs, broken occasionally by the beds of mountain torrents; along the SE shore there are some small beaches.

Generally, when approaching the island from the N between April and October, the land can seldom be distinguished until within a distance of 20 miles. Beyond this distance, the island usually appears as a haze.

The months of January and February, when the sky is slightly clouded, are the most favorable months in which to identify Pico de Teide from extraordinary distances, especially just before or after rains.

Tides—Currents.—The current sets W, strongly at times, to the S of Tenerife. On the E coast, it usually sets S, but its direction and strength are subject to the influences of the wind. The average rate of the current is reported to be 0.8 knot.

Caution.—When rounding Punta de Teno, the W extremity of Tenerife, the NE trade wind will be encountered usually with considerable force. Although violent and squally in the vicinity of this point, the wind usually moderates to the N of it.

Vessels approaching from the SW, during the winter months, are advised to keep to the SE side of the island.

8.25 Punta de Teno (28°20'N., 16°55'W.) the W extremity of Isla de Tenerife, is formed by a low peninsula. A heavy sea is usually encountered in the vicinity of the point.

A light is shown from a tower, 20m high, standing on the SW extremity of this point.

The land lying E of the point rises to a height of 500m within a distance of about 1 mile and gives the appearance of a steep drop to the sea when viewed from offshore. The coast SE of the point is formed by a remarkable steep cliff, 600m high, which is intersected by several ravines. The coast NE of the point is generally low and foul. However, at Punta de Tierra Mala, 2.3 miles ENE, a steep cliff rises from the sea to a height of 500m.

Punta de Buenavista, located 6 miles NE of Punta de Teno, is fairly low and is fronted by rocks and a reef. It can easily be identified by Montana Taco, 319m high, standing 1.3 miles SSW of it. The point is marked by a light.

Rada de Garachico, entered between Punta de Buenavista and Punta Riquer, 5 miles ESE, provides anchorage in good weather to vessels with local knowledge. The bottom in some places within this bight is rock and the area is completely open to the N which makes anchorage here uncertain even in good weather. El Roque, a large and steep-to rock, lies close off the town of Garachico, 1.5 miles W of Punta Riquer.

Punta de Don Pedro, located 13.5 miles ENE of Punta de Teno, is a rocky and much indented point with low cliffs. Baja de los Realejos, two pinnacle rocks with a depth of 3.7m, lie about 4 miles ENE of the point and are steep-to.

Vessels, with local knowledge, can obtain anchorage, in depths of 20 to 30m, rock and sand, NW or NE of Punta El Guindaste which is located 0.7 mile S of Baja de los Realejos. However, numerous rocks, above and below-water, lie off the point and a heavy swell sets into this area.

Puerto de la Cruz (28°25'N., 16°33'W.), a resort town, is situated 7 miles E of Punta de Don Pedro and can easily be identified by the numerous multi-story buildings. It is approached between two rocky spits which extend up to 0.4 mile seaward and have depths of 0.6 to 3.8m at their outer ends. A small craft pier, protected by a breakwater, fronts the town, but a heavy swell frequently sets into the harbor and makes mooring difficult. Anchorage may be obtained, in a depth of 35m, about 0.4 mile N of the breakwater. However, this anchorage, which lies close to the coastal bank, is dangerous in winter and not in general use throughout most of the year.

Punta del Viento is located 10 miles NE of Puerto de la Cruz. The coast between consists of a series of rocky bays formed by low to moderately high cliffs. Anchorage is not recommended within them or off them as the holding ground is poor and a heavy swell often sets towards the shore.

To the NE of Punta del Viento, the shore is fronted with rocks, difficult to approach, and intersected by several ravines.

Punta del Hidalgo, located 6 miles NE of Punta del Viento, is low, tree-covered, and fronted by foul ground. Depths of less than 10m lie up to 0.5 mile seaward of it and this point should be given a berth of at least 1 mile. The land rises steeply to heights of 500m or more about 1 mile SE of the point. The point is marked by a light.

8.26 Punta Tamadiste (28°35'N., 16°16'W.), located 3 miles E of Punta Hidalgo, is formed by a high, steep, triangular pillar of rock. It is the most prominent feature along this part of

the coast. The shore to the E and W of this point is formed by dark-red cliffs which are fringed by rocks at their bases.

Baja de las Nieves, with a least depth of 6.3m, lies 0.7 mile offshore, about 2 miles E of Punta Tamadiste.

The coast from this point to the NE end of the island is formed by low crumbling cliffs, which are fronted by rocks and have small beaches intersecting them at intervals along the shoreline.

Roque de Dentro (28°35'N., 16°09'W.), located 6 miles ENE of Punta Tamadiste, is 109m high, yellow and conical, and joined to the main island by a reef. It is the N extremity of Isla de Tenerife.

Roques de Anaga (28°36'N., 16°09'W.), a group of black rocks, lie 0.5 mile N of Roque de Dentro. Roque de Fuera, the N rock of the group, is dark with two conical summits, 64m high. The group is separated from Roque de Dentro by a channel, 0.4 mile wide, which has depths of 19 to 23m. La Palometa, a rock just above water, lies about 0.2 mile W of Roque de Fuera.

Punta del Roque Bermejo (28°35'N., 16°08'W.), the NE extremity of Isla de Tenerife, is located 1.5 miles SE of Roques de Anaga. Roque Bermejo, 15m high, lies close off this point and is fronted by shoal water extending up to 0.2 mile seaward.

A main light (Anaga) is shown from a prominent tower, with a dwelling, 12m high, standing on rising ground, 0.4 mile W of Punta del Roque Bermejo. It has been reported that due to its elevation, the light is sometimes obscured by mist even when there is no sign of fog at sea level.

8.27 Punta de Anaga (28°33'N., 16°07'W.), located 1.2 miles SSE of Punta del Roque Bermejo, is the E extremity of Isla de Tenerife. It is steep, inaccessible, and fringed by rocks. A prominent white chalk patch, known as La Mancha Blanca, is located close N of this point.

Bajo de la Mancha Blanca, a rocky shoal with a depth of less than 1.8m, lies 0.4 mile ENE of Punta de Anaga and breaks heavily in bad weather. Vessels are advised not to round Punta de Anaga at a distance of less than 2 miles.

Los Rodeos aeronautical light, which often can be seen at considerable distances, is shown from a steel tower standing at an elevation of 650m, about 11 miles WSW of Punta de Anaga.

Punta de Antequera, located 1.5 miles SSW of Punta de Anaga, is a steep projection, 213m high, which from the NE appears as an island.

Anchorage can be obtained in a small bay known as Ensenada de Zapata, under the lee of Punta de Antequera. There are depths of 15 to 16m, sand, about 0.3 mile from the shore. This roadstead is often frequented by small fishing vessels and the head of the bay provides a good landing place.

A naval signal station stands on the slope of a hill above Punta de Roquete, 1.3 miles SW of Punta de Antequera. The ruins of an old signal station are situated on the summit of the same hill.

Punta de los Organos, located 3 miles SW of Punta de Antequera, is low and flat. A large conspicuous block of apartment houses stands 0.7 mile NE of the point and the resort town of San Andres, with its black sandy beach, is situated 0.6 mile SW of it.

Santa Cruz de Tenerife (28°28'N., 16°14'W.)

World Port Index No. 38160

8.28 Ciudad de Santa Cruz stands on level ground, 9 miles SW of Punta de Anaga, and is backed by steep sloping mountains. The harbor, which fronts the city, consists of four main basins protected by breakwaters.

Puerto Caballo, lying on the S side of the city, has facilities for loading oil products from a refinery on the shore.

Winds—Weather.—Santa Cruz is open to winds from the ENE to SSW and a swell generally sets in due to the prevalence of E winds. During the winter months, strong S winds frequently occur and cause a heavy sea in the roadstead. Gales from the SE may occasionally occur between January and March, but they are infrequent.

During summer and much of the rest of the year, the winds are from the NE, but they are partially blocked or reduced by the interceding mountains.

Fog is of no great consequence; however, haze is common in summer and mist forms in the mountains during winter.

Tides—Currents.—Tides rise 2.2m at springs and 1.7m at neaps.

The tidal currents generally set NE on the flood and SW on the ebb; both attain rates of about 1 knot at springs.

Depths—Limitations.—Darsena Pesquera, the NE basin, is protected by Dique de Abrigo, a breakwater, which extends 0.5 mile SW. This basin has depths of 6.3 to 9.6m and is used by fishing vessels and yachts.

Darsena Este (formerly Nordeste), situated 0.7 mile SW of Darsena Pesquera, is protected by Dique del Este, a breakwater which extends about 0.7 mile in a general SW direction. There is 1,325m of total quayside on the inner side of this breakwater, with depths of 12 to 19.5m alongside. A container quay, situated at the head of this basin, is 435m long and has a depth of 10m alongside.

Darsena Sur (formerly Sudoeste), situated 0.7 mile SW of Darsena Este, is protected by Dique Muelle del Sur, a breakwater which extends 0.7 mile NE. There is 1,654m of total quayside on the inner side of this breakwater, with depths of 8 to 12m alongside. Muelle de Ribera, situated at the W side of this basin, has 1,152m of total quayside, with depths of 7 to 10m alongside. Muelle Norte, situated at the NW side of this basin, is 103m long and has a depth of 8m alongside.

Darsena de los Llanos (formerly Nueva Darsena Sur), situated close S of Darsena Sur, is protected by the E breakwater which extends 0.8 mile SSW from the root of Dique Muelle del Sur. There is 1,426m of total quayside on the inner side of this breakwater, with depths of 8 to 12m alongside. A quay situated on the W side of the basin has 1,105m of total berthing space, with a depth of 8m alongside. A quay situated at the head of the basin is 150m long and has a depth of 8m alongside.

There are facilities for general cargo, tanker, bulk, container, passenger, and bunkering vessels within the basins. Vessels up to 300m in length and 18.3 draft can be handled.

Puerto Caballo (Puerto de la Hondura), the oil terminal, is situated 0.7 mile SW of the entrance to Darsena de los Llanos. A jetty and a T-head pier, with dolphins, can handle vessels up to 45,000 dwt; these berths are mostly used for LPG vessels

and tankers loading refined spirits. A buoy berth connected to a floating pipeline can accommodate tankers up to 240,000 dwt.

Aspect.—Several large buildings, some reaching heights of over 90m, stand in the city, but generally, it is formed of white flat-roofed houses which are situated right up the W slopes of the mountains.

The oil refinery situated S of the city has several prominent chimneys with gas flares which form excellent aids at night.

Tenerife airport aeronautical light, situated 3.5 miles WNW of the city, is also a good aid at night.

Other conspicuous landmarks include a tall and dark building, 96m high, standing 0.5 mile SW of the root of Dique Muelle del Sur; several radio masts, marked by obstruction lights, standing 1.5 miles NW of the root of Dique Muelle del Sur; and Cantera de la Jurada, a white quarry situated on the shore, 0.5 mile NW of the head of Dique del Este.

Prominent landmarks include the Church of La Concepcion, 53m high, standing 0.4 mile SW of the root Dique Muelle del Sur; the San Francisco Church, 50m high with a tower, standing 0.3 mile W of the root of Dique Muelle del Sur; and a crane reported to stand midway along the E breakwater of Darsena de los Llanos.

Pilotage.—Pilotage is compulsory. Vessels should send an ETA message 48 hours and 24 hours in advance through Tenerife Radio (EAT). Pilots can be contacted on VHF channel 12, 14, or 16 and board up to 2 miles seaward of the head of Dique Muelle del Sur. During bad weather, the pilot launch may remain under the lee of Dique Muelle del Sur and direct vessels by radio.

Anchorage.—Vessels proceeding to anchorage are generally directed by VHF from the pilot station. The usual anchorage berths lie in depths of 60 to 80m, sand, about 0.2 mile seaward of Dique Muelle del Sur.

Large tankers sometimes anchor, in depths of 60 to 75m, in an area lying about 0.7 mile ESE of the root of Dique del Este.

There are facilities for supplying bunkers to vessels at anchor.

Fishing vessels can obtain anchorage, in depths of 6 to 8m, within Darsena Pesquera.

Tankers may also anchor, in a depth of 37m, about 0.2 mile SE of the T-head pier at Puerto Caballo.

Caution.—An anchorage and fishing prohibited area, the limits of which are shown on the chart, extends seaward from the shore in the vicinity of the entrance to Darsena de los Llanos.

A submarine pipeline extends 400m ENE from the root of Dique del Este.

It is reported (1992) that works are in progress in the W part of Darsena Este.

8.29 Punta de Guadamojete (28°24'N., 16°19'W.), formed by a cliffy projection, is located 4 miles SW of Puerto Caballo oil terminal. The coast between consists of steep-to cliffs, over 100m high. The point can be identified by a small banana plantation, surrounded by a white wall, situated fairly close within it. A small boat harbor, protected by a jetty, lies close W of the point.

Candelaria, a small town, is situated at the head of the bay formed between Punta del Guadamojete and Punta del Socorro, 5.2 miles SSW. It is fronted by a small yacht and fish-

ing boat harbor which is protected by two breakwaters. Prominent chimneys stand close to the shore, 2 miles N of the harbor and a conspicuous clock tower stands in the town.

Caution.—Due to the existence of submarine cables, anchoring and fishing are prohibited in an area, the limits of which are shown on the chart, extending ESE from the vicinity of Candelaria.

A submarine cable extends seaward from a point on the shore, 1.2 miles N of Candelaria.

Punta del Socorro (28°19'N., 16°21'W.), a low headland, rises from the sea in a series of rocky steps to a conical peak known as Montana de Guimar. This peak is 276m high and stands 1 mile WNW of the headland. Beaches fringe both sides of the point and a small boat harbor is situated at Puerto de Guimar, on the S side. A rock, awash, lies close off the entrance to the harbor and local knowledge is recommended.

Punta Honduras is located 8 miles SSW of Punta del Socorro and a prominent hotel stands 2 miles N of it. Montana de Fasnia, with a prominent white hermitage surmounting its summit, stands 2 miles NNW of Punta Honduras.

8.30 Punta de Abona (28°09'N., 16°25'W.), located 10 miles SSW of Punta del Socorro, is not particularly high but consists of bold cliffs which constitute the most prominent feature along this section of the coast. A hospital and a church, with a high cross, are situated 0.5 mile WSW of the point.

A main light is shown from a tower, 39m high, standing close SW of the point.

Montana Centinela, 269m high, rises 1.8 miles W of Punta de Abona and is a fairly good land mark when seen from a few miles offshore.

Bahia de Abona is entered between Punta de Abona and Punta del Ternero, 1 mile N, and provides good shelter in W winds. The village of El Poris de Abona stands in the NW corner of this bay and is fronted by a pier, 70m long, with a depth of 4m at its head.

Anchorage can be taken by ocean-going vessels, in a depth of 20m, sand and coral, just within the entrance points of the bay. Caution is advised as the depths increase to over 100m only 0.3 mile seaward of this berth. The bay is not safe in strong E winds.

Punta del Camello is located 5.5 miles SW of Punta de Abona. A rock, with a depth of 9.3m, lies about 0.4 mile ENE of this point and is the outermost danger along this part of the coast.

Montana Ifara, 303m high, rises 2 miles WNW of the point and has a conical prominent summit.

A steam generating plant stands on reclaimed land about 0.4 mile N of Punta del Camello. A conspicuous hotel stands 3 miles SW of Punta del Camello. A conspicuous bell tower stands 3.2 miles SW of Punta Abona.

Punta Roja, 171m high, is located 4 miles SW of Punta del Camello. It is reddish in color and surmounted by a white pillar. This point sometimes appears from a distance as a detached conical rock.

A small airport is situated 1.5 miles NW of Punta Roja. An aeronautical radiobeacon is situated in its vicinity; the control tower is reported to be very prominent.

An anchorage, used by tankers unloading fuel oil, lies 1 mile W of Punta Roja. A group of buoys moored at the anchorage mark the seaward end of a submarine pipeline which extends NNW to the shore.

Caution.—A submarine cable extends SW from a point on the shore, about 0.4 mile NW of Punta Roja. It is also reported that a small boat harbor has been built in this vicinity.

8.31 Punta Montana Amarilla (28°00'N., 16°39'W.) is located 4.7 miles WSW of Punta Roja. The coast between is low is broken only by several small, conical hills. A prominent hotel stands 0.5 mile W of the point. Montana La Centinela, surmounted by a cross, rises 4.5 miles N of the point.

Punta Rasca (28°00'N., 16°42'W.), located 7.8 miles WSW of Punta Roja, is the S extremity of Isla de Tenerife. This point is low but is backed by a hill, 152m high, standing 0.7 mile inland.

A main light is shown from a tower, 32m high, standing on the point.

The coast rises remarkably to a line of steep cliffs, 100m high, at a point about 2 miles NNW of the light.

Punta del Guincho (Camizo), located 4 miles NW of Punta Rasca, is low and shelving with salt pans on it. Depths of less than 9m extend up to 0.4 mile SW of this point.

Ensenada de los Cristianos, a small bay, is entered 1 mile SE of Punta del Guincho. The resort town of Los Cristianos, marked by several large buildings, stands at the head of this bay. A small harbor, protected by a breakwater, fronts the town and is used by coasters, ferries, yachts, and small craft. There is a quay, 230m long, with a depth of 6m alongside and facilities for fishing vessels. It is reported that vessels up to 5,700 dwt have been handled.

Anchorage may be taken, in a depth of 27m, sand and stone, near the head of the bay, about 0.5 mile S of the town. The berth is sheltered from all but SW winds and has good holding ground. Local knowledge is advised.

The coast from Punta del Guincho trends NW for 9 miles to Punta de San Juan and is generally low and sandy with several rocky patches which extend up to 0.4 mile offshore. A prominent mountain, 1,003m high, rises 3.7 miles NE of Punta del Guincho.

It is reported that a marina has been constructed at Puerto Colon, 1.8 miles N of Punta del Guincho.

Baja de Adeje consists of a group of rocks, some above-water, lying on a spit which extends 0.3 mile seaward from a point on the coast, 3 miles NW of Punta del Guincho.

The small fishing town of San Juan stands close E of Punta de San Juan and is marked by a chimney. Several prominent hotels stand along the coast in this vicinity.

A spit extends 0.5 mile seaward from a point on the coast, 1.2 miles NW of Punta de San Juan. It has depths of less than 10m and two rocks, awash, lie near the center.

The coast trends NNW for 4 miles from Punta de San Juan to La Punta and is formed by low cliffs fronted by above and below-water rocks.

8.32 Fondadero de los Gigantes (28°16'N., 16°51'W.) is entered between La Punta and Punta de Tamaimo, 2 miles NW. This bay affords good shelter from winds from the NNW through E to SSE. During E winds, it is considered to be one of

the best roadsteads and ocean-going vessels can seek shelter here.

Los Gigantes, a steep and prominent cliff, rises to a height of 500m on the N side of this bay, about 1 mile SE of Punta de Tamaimo.

Good anchorage can be taken, in depths of 20 to 30m, about 0.3 mile SSW of the steepest part of this cliff.

Punta de Tamaimo (28°17'N., 16°52'W.) consists of a steep cliff which rises to a height of 500m less than 0.2 mile inland. The coast extending NW to Punta de Teno, the W extremity of Tenerife, is formed by high, steep, and prominent cliffs which are intersected, at intervals, by deep ravines. This stretch of coast, 5.5 miles long, is barren and inaccessible except for occasional beaches situated at the base of the ravines.

Isla de Gran Canaria

8.33 Isla de Gran Canaria (28°00'N., 15°30'W.), lying 30 miles ESE of Isla de Tenerife, is important because of its resources, fisheries, and good harbor at Puerto de La Luz (Las Palmas). The island is the most fertile and has the best supply of water of all the islands in the Islas Canarias.

Gran Canaria is very mountainous. Los Pechos (Nieves), an irregular mass, stands near the center of the island and attains a maximum height of 1,949m. Roque Nublo, 1,700m high, rises 2 miles W of the above peak and from W, S, and NE appears as an isolated pillar of rock.

When seen from well offshore, the island appears high in the center with a broken slope on either side falling to the sea. Numerous secondary peaks and craters stand on the island; several mountain streams traverse the surface and flow into the sea. La Isleta, the peninsula forming the NE extremity of the island, appears as a detached conical islet when seen from the E or W.

An aeronautical light is shown from a radio mast, 55m high, standing at an elevation of 1,604m, 3 miles NNW of Los Pechos.

Caution.—An area used for the dumping of explosives (depth charges), with a radius of 3 miles, is centered about 13 miles E of the NE extremity of Isla de Gran Canaria and may best be seen on the chart.

8.34 Punta Sardina (28°10'N., 15°42'W.), the NW extremity of Gran Canaria, is low and rounded. A main light is shown from a 24m high tower, with red bands, attached to a dwelling, on the NW side of the point.

Depths of less than 10m extend up to 0.2 mile NW of the point, and a rock, with a depth of 1.2m, lies about 0.2 mile offshore, 1 mile ENE of the point.

Rada de Sardina lies close S of Punta Sardina and is sheltered from N and E winds. Two small piers are situated at Puerto de Sardinias, on the N side of the head of this bay.

Punta Guanartermo, located 0.7 miles E of Punta Sardina, is bold and cliffy. Rada de Galdar is entered between this point and Punta de Ortiz, 2.5 miles W. This bay is occasionally used by coasters and fishing boats in good weather.

Pico Tamabada, 1,444m high, stands 7 miles S of the point and is square-shaped. Pico del Viento, 1,000m high, stands 5 miles SE of the point. Both of these mountains form good land

marks from offshore. Pico de Galdar, 450m high, stands 1.3 miles S of Punta Guanartermo. Its summit is formed by a conspicuous cone and is an excellent landmark when approaching the coast.

Punta del Camello, low and cultivated, is located almost midway along the N coast of Gran Canaria. It is fronted by rocky shoals which extend up to 0.3 mile seaward. Monte Cardones, 280m high, and Montana de Arucas, 300m high, rise 1.8 miles SE and 2 miles S, respectively, of the point and serve to identify the area.

Bahia del Confital is entered between Punta del Camello and Punta del Confital, the W extremity of La Isleta, 4.5 miles E. This bay is exposed to the N swell and has a reef at the head. It is only suitable as a place of shelter for small craft with local knowledge.

Caution.—An area, in which anchoring and fishing are prohibited due to submarine cables, lies in the vicinity of Bahia del Confital and may best be seen on the chart.

8.35 La Isleta (28°10'N., 15°25'W.) is the peninsula which forms the NE extremity of Isla de Gran Canaria. It consists of three main peaks, each over 200m high, and is connected to Gran Canaria by a low and sandy isthmus which encompasses Puerto de la Luz. From the N and W, this peninsula appears as a detached island.

A main light is shown from a tower, 9m high, standing at an elevation of 249m, on the N part of the peninsula. A radio-beacon is situated at the light, which is conspicuous but may occasionally be shrouded in mist.

A lookout tower stands on the summit of a hill, about 0.8 mile S of the light.

Depths of less than 10m extend up to 0.4 mile N and 0.8 mile ENE of Punta de la Vieja, the N extremity of La Isleta. Several shoal patches, with depths of less than 1.8m, front the peninsula; it is recommended that vessels stay at least 2 miles from it.

Punta el Nido, the E extremity of La Isleta, is formed by a low projection. El Roque, 3m high, lies close SE of the point and is prominent. A wreck, with a depth of 9.6m, lies about 0.5 mile S of El Roque.

Caution.—A prohibited area, within which lies unmarked wrecks and hulks, extends up to 1.3 miles S of Punta el Nido and may best be seen on the chart.

Puerto de La Luz (Las Palmas) (28°09'N., 15°25'W.)

World Port Index No. 38170

8.36 Puerto de la Luz, situated within the bay formed S of La Isleta and on the E side of its connecting isthmus, is the port for the city of Las Palmas and is frequently known by the latter name. It consists of a major commercial harbor and a naval base.

Winds—Weather.—Winds from N predominate throughout the year and in general average at force 3. In winter, depressions to the N may shift the wind patterns to the NW or SW, but the port is also well-sheltered from these directions. In January, SE winds may occasionally occur and these cause an uncomfortable swell within the harbor.



Puerto de la Luz from S



Puerto de la Luz from S

Fog is rare, but haze, which can reduce visibility to 5 miles or less, has a moderate frequency. In general, visibility is usually better than 12 miles for 85 per cent of the time, with most limiting effects occurring between January and April.

Average temperatures at the port vary from a high of 29°C in August to a low of 14°C in January and February.

Tides—Currents.—Tides rise 2.5m at springs and 1.9m at neaps.

The tidal currents in the roadstead and harbor are slight, usually setting SW.

Depths—Limitations.—A breakwater pier, Dique Reina Sofia, extends 1.6 miles S from the SE coast of La Isleta. Another breakwater pier, Dique Leon y Castillo (formerly Dique del Generalísimo Franco), extends 1.1 miles S from a point, 0.9 mile SW of the root of Dique Reina Sofia.

The outer harbor is formed between these two breakwater piers. Contradique Exterior, an extension, extends 0.4 mile NE into the outer harbor from the head of Dique Leon y Castillo. Contradique Interior, another extension, extends 0.2 mile SE into the outer harbor from the E side of the root of Dique Leon y Castillo. Drydock and repair yards are situated at the head of this outer harbor.

A dolphin berth, 500m long, is situated at the inner side of Dique Leon y Castillo. It has a depth of 22m alongside and is used by large tankers under repair.

Muelle de Reparaciones, 550m long, extends N of the dolphin berth. It has depths of 8 to 14m alongside and is used for repairs.

Muelle de Adosado, 725m long, extends S of the dolphin berth. It has depths of 20 to 22m alongside and is used mostly for lay up.

Contradique Interior, also known as Quay EN3, is 440m long. It has depths of 13.6 to 13.9m alongside the NE side and a depth of 14.5m alongside the SW side.

Quay EN1, 520m long, and Quay EN2, 410m long, are situated at the NW side of the outer harbor and have depths of 12m alongside. They are mostly used by general cargo, ro-ro, bulk, and container vessels.

There are no restrictions for length or beam in the outer harbor and it is reported vessels up to 550,000 dwt and 22m draft have been accommodated.

The inner harbor lies W of Dique Leon y Castillo; its NW part is mostly used by fishing and coastal vessels.

Muelle de Santa Catalina, 400m long, is situated at the W side. It has depths of 4 to 8m alongside and is mostly used by inter-island and mainland ro-ro ferries and a jetfoil service.

Muelle de la Luz, at the N end, has 1,200m of total quayside, including facilities for grain. Vessels up to 11m draft can be handled at the cargo berths; vessels up to 9.8m draft can be handled at the grain berths.

Muelle de Primo Rivera, which connects the roots of Muelle de la Luz and Dique Leon y Castillo, is 285m long and can handle vessels with drafts up to 11m.

Dique Leon y Castillo has about 2,000m of total quayside along the W side. It is used by passenger vessels and vessels bunkering with drafts of 11 to 12.6m; there are no restrictions on length or beam.

Vessels calling off the port for embarkation or disembarkation of personnel or supplies can be attended by launch or helicopter

without entering. The helicopter usually meets vessels about 6 miles E of the harbor. Vessels should send an ETA and request for an off-port transfer at least 72 hours in advance with confirmations 48 hours, 24 hours, and 12 hours in advance.

Aspect.—The entire area to the W and S of the harbor has been built up and when approached at night, is ablaze with lights. Lights mark the heads of Dique Reina Sofia and Dique Leon y Castillo, but they have been reported difficult to identify against the background of the city lights.

A lighted range is situated at the head of the inner harbor and may best be seen on the chart. It has been reported (1998) that this range is difficult to identify in daylight.

Pilotage.—Pilotage is compulsory. Vessels should send an ETA message at least 24 hours and 18 hours in advance. Pilots board 0.4 mile W from the head of Dique Reina Sofia and may be contacted on VHF channel 14.

Regulations.—The maximum draft allowed in the port is 20m; there are no length or beam restrictions. Vessels may berth and unberth at any time.

Vessels carrying dangerous cargo must apply, through their agent, 48 hours in advance (72 hours for explosives) for permission to enter the port, stating quantity, IMO class, UN number, port of origin, and destination of cargo. Tankers in ballast must declare whether gas-free or made inert.

There is a speed limit of 7 knots in the inner harbor.

Anchorage.—Puerto de la Luz has been divided into five anchorage zones, as follows:

1. North Roadstead Anchorage—Vessels of medium and large tonnage, vessels carrying dangerous cargo, and, under exceptional circumstances, vessels transferring fuel.
2. South Roadstead Anchorage—Small vessels.
3. East Outer Harbor Anchorage—Vessels having prior authorization.
4. Alcaravaneras Anchorage—Small vessels having prior authorization.
5. Emergency Anchorage—Vessels who are landing medical cases, stowaways, or crew changes and whose expected stay is of a short duration. Anchoring takes place with a pilot onboard.

Caution.—While alongside the berths, vessels may experience heavy swells which set into the harbor.

A prohibited anchorage area, the limits of which are shown on the chart, lies in the approach to the harbor.

8.37 Ciudad de las Palmas, the city, occupies the promontory standing 4 miles S of Punta el Nido. It stands on the slopes of Cordillera de San Francisco and can easily be identified by the numerous large buildings, the numerous white-roofed houses, and a conspicuous cathedral.

Caution.—Due to the existence of submarine cables, which extend E from the coast in the vicinity of the city, a prohibited anchorage and fishing area, the limits of which are shown on the chart, lies adjacent to the coast.

Punta Melenara (27°59'N., 15°22'W.), 68m high, is located 7 miles SSE of Las Palmas and is formed by a rocky knoll. A reef extends up to 0.3 mile E of the point and an above-water rock lies near its outer end. A conspicuous wreck lies on this reef, close NW of the above-water rock.

A light is shown from a tower, 17m high, standing on the point and a conspicuous chimney stands at a power station, 3.5 miles NW of it.

8.38 Punta de la Salineta (27°58'N., 15°23'W.) is located 1 mile SSW of Punta Melenara and is surmounted by three oil tanks. A conspicuous chimney stands close NW of the point.



Punta de la Salineta

Two submarine pipelines, marked by mooring buoys, extend 0.3 mile SSE from a point on the shore, 0.2 mile W of the pierhead. Tankers can secure at the seaward end of these pipelines, in a depth of 15m, and load liquid nitrogen products. Pilotage is compulsory and available at Puerto de la Luz.

A pier, with depths of 8.5 to 15m alongside, extends 145m SSE from a point on the shore, 300m SW of Punta de la Salineta. Vessels up to 150m in length can go alongside this pier to load ammonium sulfate. Anchorage, with good holding ground, may be taken, in 24 to 30m, sand, about 0.2 mile ESE of the pier head.

Punta de Gando, the E extremity of Gran Canaria, is located 3.5 miles S of Punta Melenara. It is formed by the SE end of a sheer, rocky peninsula which rises to a height of 103m. Roque de Gando, 22m high, lies about 0.2 mile off the NE coast of the peninsula. It is steep-to, dark, and somewhat conspicuous. A dark cliff, which rises straight from the sea, stands 2.3 miles NNW of the point and is also conspicuous.

Baja de Gando, with a least depth of 0.2m, lies 0.8 mile ENE of Punta de Gando. This reef, at nearly high water, has the appearance of a tide rip and much of the time does not break. Vessels rounding Punta de Gando are advised to stay at least 2 miles seaward of the peninsula.

An obstruction light is shown from the summit of Punta de Gando and an airport is situated 1.5 miles WNW of it. The control tower at the airport is reported to be conspicuous.

An exposed shipwreck is located in position 27°56.6'N, 15°22.2'W.

8.39 Punta Arinaga (27°53'N., 15°23'W.), located 4.5 miles SSW of Punta de Gando, is only moderately high and is fronted by a reef which extends SE from it. Roque de Arinaga, 7m high, lies at the outer end of this reef.

A light is shown from a prominent tower attached to a dwelling, 14m high, standing on the point.

Monte de Arinaga, 198m high, rises to a conical summit, 0.5 mile NW of the point and is a good landmark from the NE; several obstruction lights are shown from the summit of this hill.

Punta Tenefe, located 4 miles SW of Punta Arinaga, is low and fringed by rocks. Barranco de Tirajana, a large and deep ravine, extends NW from the point into the higher elevations and is a good landmark from the SE.

Caution.—Due to the existence of submarine cables, a prohibited anchoring and fishing area, the limits of which are shown on the chart, extends seaward from a point on the coast, close SW of Punta Arinaga.

8.40 Punta de Maspalomas (27°44'N., 15°36'W.), the S extremity of Gran Canaria, is located 9.5 miles WSW of Punta Tenefe. It is formed by large heaps of white sand and is fronted on each side by coastal beaches. Numerous large hotels and apartment buildings stand in the vicinity of this point.



Maspalomas Light

A main light is shown from a conspicuous tower with a dwelling, 56m high, standing on the SW extremity of the point which is known as Morro de Colchas.

A spit, with depths of less than 20m, extends about 0.5 mile SW from Morro de Colchas. Bahia de Melonera is entered 1 mile NW of Morro de Colchas and a small boat harbor, protected by a breakwater, is situated at its head. Vessels can anchor, in a depth of 12m, within the bay, but during the month of August, frequent squalls from all directions have been experienced at this anchorage.

Punta Taozo is located 4 miles WNW of Punta de Maspalomas. This point is prominent and may be identified by a cement works standing on its summit and the town of Arguineguin which stands close NNE of it. A small boat harbor, protected by breakwaters, is reported to front the town.

A pier, 200m long, extends ESE from Punta Taozo and has depths of 8.5m alongside its outer end, reducing to 4m alongside at its root. Good anchorage, sheltered from N winds, may be obtained, in a depth of 14m, coral, about 0.3 mile W of the town of Arguineguin.

Punta Castillete is located 6.5 miles NW of Punta Taozo. The coast between is indented by numerous coves and small inlets which are all completely open to the SW. Several small tourist yacht harbors and marinas are situated within them.

Punta Castillete, marked by a light, is formed by steep cliffs; the town of Mogan is situated close E of it. The point can be identified by Cruz de Piedra, 183m high, standing 1 mile SE of

it. This rocky hill is marked by a prominent white pillar situated on its summit. Anchorage, sheltered from N and E winds, can be taken, in a depth of 10m, sand and stone, about 0.3 mile SE of Punta del Castillete.

8.41 Cabo Descojonada (27°55'N., 15°50'W.), the W extremity of Gran Canaria, is located 6.8 miles NW of Punta Castillete. It is formed by high pyramidal cliffs which give an impressive appearance from seaward. The land backing the cape is rugged, mountainous, and rises to a height of 892m only 2 miles inland. The coast extending for 5 miles to the N and S of the point is steep and cliffy; the interior consists of a series of humped and conical peaks which gradually slope downward towards the S end of the island.

Cabo Colorado, located 3.5 miles N of Cabo Descojonada, is high and sheer. It can easily be identified by Montana Amurgar, 1,050m high, standing only 0.7 mile SE. This mountain has a prominent wide and flat summit. Roque Colorado, reddish in color, projects from a point on the coast, 0.7 mile NE of Cabo Colorado, and is a good landmark from seaward.

Punta de la Aldea, located 2.5 miles NNE of Cabo Colorado, is steep-to. Rada de la Aldea, lies close S of the point and provides anchorage, sheltered from N winds, in a depth of 15m, sand and rocks, about 0.2 mile offshore.

Punta de las Nieves (28°06'N., 15°43'W.) is located 8 miles NE of Punta de la Aldea. The coast between is mostly high, steep, rocky, and fringed by a few small beaches.

Puerto de las Nieves is situated close E of the point. A conspicuous church stands in the town; the prominent village of Agaeta is situated 0.7 mile E of it.

Roque de las Nieves, a prominent high rock, lies close to the shore, 0.2 mile E of the point. It is surmounted by a conspicuous cross.

A pier is situated on the S side of the point. It is reported to have a depth of 5m alongside the head and to be used by coasters. Anchorage can be taken, in a depth of 14m, sand, about 0.2 mile SSW of the pier, but the roadstead is completely open to the W.

The coast trends 3.5 miles N from Punta de las Nieves to Punta Sardina, previously described in paragraph 8.34. During the prevailing NE winds, strong squalls blow down the ravines along this section of the coast and small waterspouts are frequently formed.

Isla de Fuerteventura

8.42 Isla de Fuerteventura (28°30'N., 14°00'W.) extends 54 miles in a NE direction from its SW end, which is located 45 miles E of Isla de Gran Canaria. Like all of the islands in the archipelago, it is high and has several prominent mountain ranges. The coasts, though generally high and abrupt, are indented by numerous sandy beaches, coves, and small bays, though none of them afford good shelter.

The island is mostly barren and there is a scarcity of water. Villa de Puerto del Rosario, on the E side of the island, is the capital.

The N part of the island consists of a group of extinct volcanic mountains, the highest of which attains a height of 689m. Near the middle of the island, the mountains divide into

two ranges which follow the coasts and then unite again farther SW where they fall abruptly to Matas Blancas, a low and sandy neck covered with white hummocks. The SW part of the island SW of Matas Blancas, forms a peninsula known as Jandia, which rises to a height of 807m at Pico de la Zarza and forms the summit of the island. Orejas de Asno (Asses Ears), 683m high, stands 2 miles WSW of Pico de la Zarza and forms a good landmark from the N and S.

From most directions, the peninsula of Jandia appears as an island lying off the main part of Fuerteventura.

Punta Gorda (28°43'N., 14°01'W.), the N extremity of the island, is low and foul ground extends up to about 0.4 mile N of it.

From this point the coast trends WSW for 7.5 miles to Punta Toston, and is low and fringed with rocks.

Punta Toston (28°45'N., 13°53'W.), the NW extremity of the island, is located 7.5 miles WSW of Punta Gorda. The coast between is low and fringed by rocks.

A light is shown from a tower, with a dwelling, 13m high, standing on this low point.

Arrecifes de Toston, a reef formed by submerged rocks, fronts the point and the shore immediately S of it. During SW winds, the sea breaks heavily on this danger. Due to depths of less than 40m lying NW of the point, deep-draft vessels should give Punta Toston a berth of at least 3 miles.

The coast then continues SSW for 28 miles to Punta Amanay and is mostly cliffy and inaccessible.

8.43 Punta de Pesebre (28°07'N., 14°29'W.) is located 18 miles SW of Punta Amanay. This point is low, fringed by reefs, and marked by a light. The coast extending E of the point is formed by a long sandy beach. The coast extending SW of the point is consists of flat stone beaches fronted by off-lying rocks.

Punta Jandia (28°04'N., 14°30'W.), the SW extremity of the island, is located 2.7 miles SSW of Punta de Pesebre. It is low, shelving, and fronted by rocks extending up to 0.7 mile seaward. Arrecife del Griego, the outermost of these rocks, dries, is steep-to, and lies SW of the point. Bahia de la Cruz, which affords anchorage, is entered close E of the point, but is open to the SE.

A light is shown from a tower with a dwelling, 19m high, standing on Punta Jandia.

An eddy current which sets N has been reported near the S end of the island. Due to this current forming whirlpools in the vicinity of Arrecife del Griego, vessels are advised to give Punta Jandia a berth of at least 2 miles.

Bajo de Amanay, an extensive bank with depths of 24 to 39m, lies centered 15 miles NW of Punta Jandia.

A bank, with a least depth of 22m, extends about 5 miles SSW from Punta Jandia.

El Banquete, a patch with a least depth of 31m, lies about 9 miles SW of Punta Jandia; depths of 46m have been reported up to 6 miles WNW of it.

Punta de Morro Jable, the S extremity of the island, is marked by a light and is located 10 miles E of Punta Jandia. This point is steep-to and a depth of 200m lies only about 1 mile S of it.

It was reported (1990) that extensive building had taken place in the vicinity of this low and sandy point.

A small fishing harbor is situated 1 mile W of the point. It is protected by a breakwater which extends 330m SW and then 425m W, and has depths of 7 to 11m alongside the inner side. A quay, 125m long, is situated at the head of the harbor and has a depth of 4m alongside.

Caution.—It is reported (1992) that a submarine cable extends seaward from a point on the coast, 0.9 mile NE of Punta de Morro Jable.

8.44 Puerto de Gran Tarajal (28°12'N., 14°01'W.), a small town, is situated 19 miles NE of Punta de Morro Jable. The coast between trends NE and ENE and several small fishing villages stand along the shore.

A pier, 235m long, extends S from the town. It has a depth of 10m alongside and is used by inter-island ferry vessels. Anchorage off the town is not recommended during winds from the E through S to SW.

Punta Lantailla (28°14'N., 13°57'W.), the SE extremity of the island, is located 4 miles ENE of Puerto de Gran Tarajal. A light is shown from a tower on a building, 12m high, standing on the point. A radiobeacon is situated at the light.

Punta del Muellito is located 9 miles NNE of Punta Lantailla and foul ground, with depths of less than 1.8m, extends up to about 0.3 mile SE of it. Salinas, a small inlet with depths of 1 to 3m, is entered close W of this point.

Ensenada de Fustes, a small inlet, is located 1.8 miles NNE of Punta del Muellito and a round castle, 6m high, stands on its NE shore. A shallow yacht harbor is situated at the W side of this inlet which affords shelter to small craft. Foul ground lies in the vicinity of the entrance and local knowledge is required.

8.45 Puerto del Rosario (28°30'N., 13°51'W.) (World Port Index No. 38180), a small harbor, formerly known as Puerto de Cabras, lies in an open bay, 6 miles N of Ensenada de Fustes.

The bay is well-sheltered from winds from the N through W to SW, and the town of Puerto del Rosario, the capital of the island, stands at its NW end.

Tides—Currents.—Tides rise 2.3m at springs and 1.6m at neaps.

Depths—Limitations.—A pier extends 620m S from the E end of the town. A quay, 200m long, at the inner end of this pier has depths of 6.2 to 9m alongside; a quay, 150m long, near the outer end has depths of 9 to 12m alongside. There are facilities for ro-ro vessels and a basin, used by fishing vessels, lies W of the pier. It is reported that vessels up to 200m in length and 9m draft can be accommodated.

Aspect.—A light marks the head of the pier. An aeronautical radiobeacon is situated near an airport, 2.7 miles SSW of the pier. A light is shown from Punta Gavioto, about 1 mile NE of the head of the pier. Two peaks, which form the S termination of the plateau extending from Mount Muda, stand 6 miles NW of the town and are good landmarks from seaward. The village of Casillas del Angel is situated 5.5 miles W of the harbor and is prominent.

Pilotage.—Unofficial pilots are available and will board vessels about 0.5 mile from the pier.

Anchorage.—Anchorage may be obtained as convenient within the bay, clear of the prohibited areas. A good berth is in depths of 14 to 18m, sand and shells, about 0.3 mile SE of the pier head.



Puerto del Rosario

Caution.—Due to the existence of submarine cables, anchoring and fishing prohibited areas, the limits of which are shown on the chart, lie in the S approaches to the port.

8.46 Punta del Corralejo (28°45'N., 13°52'W.) is located 15 miles N of Puerto del Rosario. The coast between is fringed with rocks but has no remarkable features.

The village of Corralejo stands 0.3 mile S of the point; two large, conspicuous buildings stand on the coast, 2 miles SE of it. A jetty and a small boat harbor, used by ferries, is situated on the SE side of the point.

The coast trends 1.5 miles NW from Punta del Corralejo to Punta Gorda, previously described in paragraph 8.42.

Isla Lobos (28°45'N., 13°49'W.), 108m high, lies 1 mile off the NE extremity of Fuerteventura, 3 miles E of Punta Gorda. The shores of this small island are mostly abrupt and fronted by sunken rocks, but a sandy beach lies on its E side. A reef extends 0.3 mile seaward from Punta Martino, the N extremity of the island. A narrow channel separates Isla Lobos from the main island. The fairway has a least depth of 6.7m but is bordered by shoal water on either side. A small wharf is reported to be situated at the S end of the island.

A light, known as Cerro Martino, is shown from a tower with a dwelling, 6m high, standing on the summit of a hill, near Punta Martino.

Good anchorage, sheltered from the NE trade wind, may be obtained, in a depth of 11m, under the lee of Isla Lobos, close SSW of its SE extremity.

Estrecho de la Bocayna (28°49'N., 13°52'W.) lies between Isla de Fuerteventura and Isla de Lanzarote. This channel has a navigable width of 3 miles between the shoal waters extending N from Isla Lobos and S from Punta Papagayo, the S extremity of Isla de Lanzarote. Although the approaches to the channel are deep, a steep-to ridge, 3.5 miles wide, lies across its narrowest part and has a least charted depth of 21m. The bottom consists of sand, shell, and coral.

Caution.—A local magnetic anomaly has been observed E of the channel.

A submarine power cable extends across the channel and may best be seen on the chart.

Ferries frequently run between the N coast of Isla de Fuerteventura and the S coast of Isla de Lanzarote.

Isla de Lanzarote

8.47 Isla de Lanzarote (29°00'N., 13°40'W.), located close N of Isla de Fuerteventura, is a popular tourist resort. It is traversed throughout its entire length by a range of high mountains. Monte Corona, an extinct volcano 609m high, stands at the N end of this range and is prominent. Pena del Chache, 670m high, stands 4.5 miles SSW of Monte Corona and is the highest peak on the island. A series of conspicuous perpendicular cliffs extend NNE from this peak, close to the coast. For a distance of 10 miles SW of Pena del Chache, a sandy desert extends to the volcanic peaks and craters which occupy the S part of the island. Some of these extinct volcanoes are surrounded by beds of lava and scoria.

Monte de la Hacha Grande, 561m high, and Monte Blanca, 596m high, stand 3 miles N and 11 miles NE, respectively, of the S extremity of the island.

Punta Papagayo (28°50'N., 13°46'W.), the S extremity of Isla de Lanzarote, is a comparatively low bluff of a dark-red color. A reef extends about 200m S of the point and terminates in a rock, awash.

Punta Pechiguera (28°51'N., 13°52'W.) is located 4.5 miles WNW of Punta Papagayo. Monte Roja, 194m high, rises 1.2 miles NE of the point. This conspicuous hill is reported to appear as a wedge-shaped island from a distance. A main light is shown from a tower, at an elevation of 54m, standing near the old light structure.

A prominent castle stands on a projection, 1.5 miles NW of Punta Papagayo.

Playa Blanca lies at the head of a bight, 2.3 miles E of Punta Pechiguera. It is fronted by a small boat harbor which is used by ferries, fishing vessels, and yachts. Anchorage, sheltered from N winds, may be obtained, in depths of 15 to 17m, off the harbor.

Punta Penedo is located 22 miles NE of Punta Pechiguera. The coast between affords no shelter and should be approached with caution. La Isleta, an islet, lies 3 miles WSW of Punta Penedo. It is fronted by cliffs and is connected to the main island by two road causeways.

Rada de Penedo, 4 miles wide, is entered close N of Punta Penedo. This bay is exposed to NW winds and is seldom used. Its shores consist of sandy beaches fringed by rocks on which the sea breaks. Los Bajos, a drying reef, lies 0.5 mile offshore, in the middle of the bay.

8.48 Punta Fariones (29°15'N., 13°28'W.), the N extremity of Isla de Lanzarote, is located 9.5 miles NE of Punta Penedo. It is low, rocky, and fronted by a reef on the N side on which two remarkable rocks lie.

Between this point and Punta del Palo, 3.2 miles SE, the coast is fringed by foul ground which extends up to 0.4 mile offshore. Punta Usaje, located 2 mile S of Punta del Palo, is a

low sandy projection which can easily be identified by the whiteness of its upper part. Several prominent buildings stand near this point.

Villa de Arrieta is situated 2 miles SW of Punta Usaje and is fronted by a small jetty. Rada de Arrieta affords temporary anchorage, in depths of 20 to 27m, about 0.8 mile offshore, SE of the village. Morro Jabali, a small conical hill, stands near the shore, 1 mile S of the village and is prominent.

Cabo Ancones, the SE extremity of Isla de Lanzarote, is located 8.3 miles SSW of Punta Usaje. It is reported that several conspicuous hotels stand 1.2 miles SW of this point.

8.49 Puerto de Arrecife (28°57'N., 13°33'W.) (World Port Index No. 38190) is situated on the SE side of the island and provides excellent shelter. It is the home port of a large fishing fleet and consists of Puerto de Arrecife, the local harbor; Puerto de Naos, the fishing harbor; and Puerto de los Marmoles, the commercial harbor.

Winds—Weather.—Winds from the NW through NE predominate throughout the year, both in the morning and midday. The average strength of these winds may reach Force 5 nearly half the time, but in general, the port is protected from the trade winds.

In winter, the prevailing winds are likely to be interrupted by a depression lying N of the islands. Such a disturbance usually causes winds from the S and SW and vessels may find it necessary to vacate the port and seek shelter at Las Palmas until conditions at Lanzarote improve.

Tides—Currents.—Tides rise 2.6m at springs and 2m at neaps.

Depths—Limitations.—At Puerto de Arrecife, Muelle Viejo, 200m long, is the main quay. Vessels up to 70m in length and 6.1m draft can be accommodated alongside. Longer vessels can be handled, but the stern must overhang the pier head as depths decrease rapidly towards the inner part of this quay. In addition, the town is fronted by several berths for small craft.

At Puerto de Naos, the entrance channel has been dredged to a depth of 5m and is marked by lighted buoys. Muelle Pesquero, used by fishing vessels, is 330m long. In addition, a quay, 165m long, is used by trawlers.

At Puerto de los Marmoles, the main commercial pier is 1,000m long, with depths of 2 to 9m alongside. It is used by ocean-going tankers and cargo vessels. In addition, there are berths for ro-ro vessels which are 120m and 150m long, with depths of 6m and 9m, respectively, alongside.

Aspect.—The town itself is a good landmark, with the Grand Hotel, tall and conspicuous, standing near the waterfront. A tank farm situated NE of Puerto de los Marmoles can be identified from some distance offshore. A conspicuous high-rise hotel is reported to stand 0.5 mile WSW of Puerto de Naos.

Pilotage.—Pilotage is compulsory for commercial vessels. Local knowledge is recommended for small craft. Vessels should send an ETA at least 48 hours in advance. Pilots board about 0.2 mile off the port and may be contacted on VHF channel 16.

Anchorage.—Vessels waiting to enter Puerto de Arrecife can anchor, in depths of 30 to 40m, sand, about 0.2 mile WSW of the head of Muelle Viejo.

Caution.—Depths in the approaches to the port are deep, but the entire harbor area is surrounded by reefs and shoals; no attempt should be made to enter without local knowledge or a pilot.

The lights on the heads of the breakwaters are reported to be difficult to identify against the lights of the town.

8.50 Punta Lima (28°56'N., 13°37'W.) is located 3.5 miles WSW of Arrecife and is fronted by a reef which extends up to 0.4 mile E.

An offshore tanker berth, consisting of mooring buoys, lies about 1 mile ENE of this point and is used by tanker vessels supplying fuel to the airport.

An aeronautical radiobeacon is situated near an airport, 1.3 miles N of Punta Lima.

Caution.—Due to the existence of submarine cables, anchoring and fishing prohibited areas, the limits of which are shown on the chart, extend from the coast between Arrecife and Punta Lima.

8.51 Punta Tinosa (28°55'N., 13°40'W.), rocky and fringed by reefs, is located 3 miles WSW of Punta Lima. Bajo del Burro, awash, lies 0.2 mile offshore, 0.5 mile E of this point.

The prominent village of Tinosa (Carmen) stands on a hillock near a beach, 0.5 mile NW of Punta Tinosa. When approaching from the S, vessels should not confuse the white houses situated in this village with those at Arrecife.

A prominent hotel is reported to stand above a beach, 0.5 mile E of Punta Tinosa.

It is reported (1993) that a small yacht harbor has been constructed about 2 miles W of Punta Tinosa.

Punta Gorda is located 5 miles SW of Punta Tinosa. Bahia de Avila, entered close N of this point, affords temporary anchorage, in depths of 13 to 30m. This roadstead is sheltered from winds from the W through N to NE, but is dangerous during winds from other directions.

The coast trends 3 miles SW from Punta Gorda to Punta Papagayo, previously described in paragraph 8.47, and is clear of dangers.

Isla Graciosa

8.52 Isla Graciosa (29°15'N., 13°30'W.) is located close NW of the N end of Isla de Lanzarote and has several prominent peaks. Monte Pedro Barbo, 266m high, stands in the central part of the island and is the highest. The N and W sides of the island are fringed with sunken rocks and are difficult of access, but a landing place is situated in a small bay on the E side.

Estrecho del Rio, the passage leading between the N end of Isla de Lanzarote and Isla Graciosa, is 0.6 mile wide at its narrowest part. It has a least depth of 6.8m, but is limited by shoals, with depths of 3 to 4.5m, which lie along both sides.

Isla de Montana Clara (29°18'N., 13°32'W.), 256m high, lies 1 mile NW of Isla Graciosa and is separated from it by a clear channel with a least depth of 13m. The N end of the island is cliffy and bold and the S end is low and shelving. Foul ground extends up to 0.2 mile seaward of the S and SE shores.

El Roquete, 40m high, lies 0.4 mile off the N side of Isla Montana Clara and foul ground extends WSW from it.

Caution.—A submarine power cable lies across the narrowest part of Estrecho del Rio; anchorage is prohibited in its vicinity.

Isla de Alegranza

8.53 Isla de Alegranza (29°24'N., 13°30'W.), the N island of the Islas Canarias, is located 4.5 miles N of Isla de Montana Clara. It is dominated by Monte Caldera, an extinct volcano which rises to a height of 289m in the SW part.

Three prominent peaks also stand in the SE part of the island and are known collectively as Montes Lobos; the highest of these rises to a height of 221m.

The W side of the island is composed of steep-to precipitous cliffs, 200m high. The remainder of the coast is lower and fronted by submerged rocks. The best landing place is situated on a small sandy beach, near a large cavern, on the S side of the island. It is protected by a few rocks which form a natural breakwater.

A main light is shown from a prominent tower with a dwelling, 15m high, standing on Punta Delgada, the E extremity of the island.

Off-lying Dangers

8.54 Roca del Este (29°16'N., 13°20'W.), located 7 miles E of the E extremity of Isla Graciosa, is a barren rock with a craggy summit, 59m high. It is steep-to except on the SE side which is fronted by submerged rocks. A rock, which dries, lies about 0.2 mile ENE of Roca del Este.

Concepcion Bank (29°58'N., 12°42'W.) lies centered about 55 miles NE of Isla de Alegranza and has a reported depth of 44m.

Dacia Seamount (31°09'N., 13°38'W.) lies about 105 miles N of Isla de Alegranza and in the track of vessels plying between the Islas Canarias and the Strait of Gibraltar. It has a least charted depth of 76m (1989).

The Arquipelago de Cabo Verde

8.55 The Arquipelago de Cabo Verde (Cape Verde Islands) is separated from the coast of Africa by a passage about 320 miles wide. The S extremity of the archipelago, which consists of ten islands and two groups of islets, lies on nearly the same latitude as Cap Vert (Cape Verde) (14°43'N., 17°30'W.).

Full independence was granted from Portugal in 1975 to Ilha the Arquipelago de Cabo Verde.

With reference to the NE trade winds, which predominate, the archipelago is divided into two sections. The windward section includes Ilha de Santo Antao, Ilha de Sao Vicente, Ilha de Santa Luzia, Ilheu de Sao Nicolau, Ilha do Sal, Ilha do Boa Vista, Ilheu Branco, and Ilheu Raso. The leeward section includes the islands of Ilha de Maio, Ilha de Sao Tiago, Ilha do Fogo, Ilha Brava, and the Ilheus do Rombo.

The islands are of volcanic origin and lie in a horseshoe pattern with the opening towards the W. None of the craters, except one on Ilha do Fogo in 1951, have been active since the discovery of the islands. Some earth tremors, although slight,

have been reported in the vicinity of the Ilha do Fogo and Ilha Brava.

The two principal harbors in the archipelago are Porto Grande, on Ilha de Sao Vicente, and Porto da Praia, on Ilha de Sao Tiago.

Caution.—The haze over the whole archipelago is often so thick that the surf may be sighted before the land.

Ilha de Santo Antao

8.56 Ilha de Santo Antao (17°05'N., 25°10'W.), the NW island of the archipelago, is very high and visible for a great distance in clear weather, but its summit is generally clouded.

The island, particularly from the W, has the appearance of being a collection of high mountains. In fact, the central part of the island is traversed by a range which extends from the E extremity towards the W extremity, but turns abruptly S before reaching the latter.

Tope de Coroa, 1,979m high, is the summit of the island and stands at the W end of the above range.

The coasts of the island are bold, and in places are fringed by rocks and shoals. Vessels should stay at least 0.5 mile from the shore and 1 mile from Ponta do Sol, the N extremity of the island, and Ponta da Salina, on the SW coast, in order to clear these dangers.

8.57 Ponta do Sol (17°12'N., 25°06'W.), the N extremity of Ilha de Santo Antao, is a low sandy promontory. Reefs, which always break, extend up to 0.2 mile seaward of it.

A light is shown from a mast, 10m high, standing on the E side of the point.

Baixo do Cavalo and Baixo Amarelo, two spits with depths of less than 20m, extend up to 0.6 mile NW and 0.4 mile N, respectively, of the point and heavy seas break over their outer ends.

The town of Vila Maria Pia (Ponta do Sol) stands on the W side of the promontory. A conspicuous customs house stands in the N part of the town and a prominent hospital stands in the S part of the town. Two prominent cemeteries are situated 0.3 mile SSW of the light structure, near the base of the rising cliffs.

Good anchorage can be obtained, in a depth of 25m, fine sand and crushed shell, within a bight about 0.4 mile SW of the point.

Ponta de Mangrade (17°03'N., 25°22'W.), the W extremity of Ilha de Santo Antao, is located 18 miles SW of Ponta do Sol. The coast between rises fairly steeply to the mountains which form the main range. Numerous small villages are scattered on the slopes of these mountains.

The point is low, rocky, and dominated by Morro de Mangrade, 108m high, standing close to the coast.

A light is shown from a column, 3m high, standing on the point.

Banco do Noroeste (17°15'N., 25°29'W.) lies about 14 miles NNW of Ponta de Mangrade and has a least depth of 30.1m (1992). A bank, with a least depth of 31m, lies 7 miles WSW of Banco do Noroeste.

8.58 Ponta da Peca (16°55'N., 25°18'W.), the SW extremity of Ilha de Santo Antao, is located 9.5 miles SSE of Ponta

Mangrade. The coast between is steep, mostly inaccessible, and indented by a few small bays which are only frequented by small vessels with local knowledge.

Baia do Tarrafal is entered 3 miles NNW of Ponta da Peca and can be recognized by the mouth of Ribeira do Tarrafal, which flows into its head. A town is situated at the mouth of the river and forms an excellent landmark as the buildings and green vegetation are visible from a considerable distance seaward. The mouth and valley of this river are the only exceptions to the general appearance of this coast, which is rugged, bare, and desolate.

A prominent water reservoir, resembling a rectangular building, overlooks the better-looking houses which stand on the S bank of the river. A tunny factory and a ruined pier are also situated in this vicinity. Small vessels, with local knowledge, can obtain anchorage, in a depth of 37m, about 250m SW of the ruined pier. Care is necessary as depths of 200m lie only about 0.5 mile offshore. The bay is sheltered from winds from the NNE through E to SSE. Swells from the NW and N occur intermittently between November and April, and at times, break heavily on the beach.

The S coast of the island is very high with slopes descending steeply to the shore. The SE part of it rises gradually to the main mountain range. A depth of 25m was reported (1980) to lie 2.5 miles off the S coast, about 7.5 miles ESE of Ponta da Peca.

8.59 Porto Novo (Porto dos Carvoeiros) (17°01'N., 25°04'W.) is situated 15.3 mile ENE of Ponta da Peca. This small harbor can be easily recognized by the houses of the town, which backs the waterfront, and by Morro de Breja, 254m high, standing 1 mile WNW of it. In addition, a prominent bridge, with four arches, spans the river which runs through the town.

A pier, 201m long and quayed on both sides, extends SSW from the W side of the town. It is reported that this pier has a depth of 7m alongside the outer end and has been used by vessels up to 5,000 tons. Anchorage can be taken, in a depth of 12m, good holding ground, about 200m S of the pier head, or in a depth of 20m, about 400m S of the pier head.

Ponta da Tumba (17°07'N., 24°58'W.) is located 8 miles NE of Porto Novo.

A main light (Fontes Pereiro de Melo) is shown from a tower attached to a dwelling, 16m high, standing 0.2 mile W of the point.

Ilheu Lombo de Boi, steep-sided and rocky, lies 0.2 mile NNW of the point. A rocky spit, with rocks awash, extends about 200m N of this conspicuous islet and usually breaks.

The coast trends 4.5 miles NW then 4.5 miles WNW from Ponta da Tumbato to Ponta do Sol, which has been previously described in paragraph 8.57. It is mostly high and rocky except in the vicinity of a village which stands at the mouth of a ravine, 1.7 miles ESE of Ponta do Sol.

Ilha de Sao Vicente

8.60 Ilha de Sao Vicente (16°50'N., 25°00'W.) is separated from Ilha de Santo Antao by Canal de Sao Vicente (Canal Sao Vicente), a deep channel, about 7 miles wide. The island consists of a mass of high volcanic mountains. A valley, which

extends from the SW part of Porto Grande to the E side of the island, divides this mass into two ranges.

Monte Verde (16°52'N., 24°56'W.), 750m high, is the summit of the island. This mountain stands in the middle of the NE range, and its peak, a conspicuous spur, is frequently obscured by clouds.

A radiobeacon is situated on the peak of Monte Verde.

The coasts of the island are generally high and abrupt; deep water lies close to most of the shores. The island is barren except for some green tamarisk. The climate is said to be healthful; however, water is scarce and there is little cultivation.

8.61 Ponta do Calhau (16°52'N., 24°52'W.), the E extremity of Isla de Sao Vicente, is steep-to and dominated by Monte Calhau, 140m high, standing 0.4 mile SW. This hill, with two summits, is dark and contrasts with the light color of the surrounding land. It may appear as an islet when viewed from the NNW or SSE.

Ponta Viana, located 1.5 miles S of Ponta do Calhau, is fronted by a spit which extends up to 0.5 mile seaward. It is reported that a strong current in this vicinity often sets towards the spit.

Ponta de Santa Luzia (Saragaca), the SE extremity of Isla de Sao Vicente, is located 1.2 miles SSW of Ponta Viana. Monte Viana, an ancient crater with white spots on its slopes, rises steeply inland from the flat area lying between Ponta Viana and Ponta de Santa Luzia. This crater, 162m high, has an almost horizon-tal crest.

A steep-sided promontory, 0.7 mile wide, forms the S extremity of Isla de Sao Vicente. Ponta da Calheta Grande, the E end of this promontory, is located 6.7 miles WSW of Ponta de Santa Luzia. A small village stands behind a sandy beach at the head of a bay which is entered close E of the point. Ponta Lombinho, a sheer and steep-to point, forms the W end of the promontory and rises to Monte Caralena, 497m high, 0.4 mile N.

Ponta Machado (16°49'N., 25°05'W.), the SW extremity of Isla de Sao Vicente, is located 6.5 miles WNW of Ponta Lombinho and dominated by Monte Ribeirinha, 225m high.

A main light (Dona Amelia) is shown from a tower, with a dwelling, 14m high, standing on the point.

Baia de Sao Pedro is entered between Ponta Machado and Ponta do Guincho, 1.7 miles SE. A sandy beach is located at the head of this bay, and a village, with a prominent church, is situated at its W end.

Anchorage.—Anchorage can be obtained in the center of Baia de Sao Pedro, in 10 to 15m, good holding ground and protected from NW through NE to SE. Caution is necessary as NE winds may funnel through the wide valley and the swells may work in from the E.

An airfield, with a conspicuous terminal building and control tower, is situated 1.5 miles NW of Ponta Machado.

Ponta Joao Albacora is located 4 miles NE of Ponta Machado. The coast between is indented by several small bays and fringed by rocks. Monte Fateixa, 571m high with a well-defined summit, rises 1.8 miles S of the point.

Ponta do Morro Branco, the W entrance point of Porto Grande, is located 1.5 miles ENE of Ponta Joao Albacora. Prominent radio masts stand 3 miles SE and 2.5 miles SSE of this point.

Ilheu dos Passaros (16°55'N., 25°01'W.), rocky and steep-to, lies in the approach to Porto Grande, 1.7 miles NNE of Ponta do Morro Branco. This islet, which appears conical from the N or S, may be passed on either side.

A light (Dom Luis) is shown from a pyramid, 5m high, standing on the summit of the islet. Buildings, connected to the light structure by a white wall with steps leading to the summit, are prominent.

Porto Grande (Mindelo) (16°53'N., 25°00'W.)

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8.62 Porto Grande, entered between Ponta do Morro Branco and Ponta Joao Ribera, 2 miles NE, is the principal port in the Arquipelago de Cabo Verde. The city of Mindelo stands on the E side of the harbor and is the capital of the island.

Winds—Weather.—The harbor is sheltered from all winds except those from NW, which are rare. The predominant NE wind, when fresh, produces gusts in the bay; however, within the protection of the breakwater, the wind is felt, but there are no seas.

Swells from the NW may occur intermittently from November to April. They round Ilha de Santo Antao and approach the harbor from the W.

Tides—Currents.—Tides rise 1.2m at springs and 1m at neaps.

The tidal currents in the bay are weak.

Depths—Limitations.—A breakwater, 450m long, extends W from the E side of the bay. Molhe 2, quayed on each side, extends 350m SW from the seaward end of the breakwater. Molhe 1 extends 200m SSW from a point along the breakwater, about 350m W of the root.

Porto Grande Berth Information			
Berth	Length	Depth	Remarks
1	310m	11.5m	Open to the sea. use is subject to wind and swell conditions
2	310m	11.5m	
3	215m	9.5m	Container berth
4	215m	9.5m	Container berth
5	90m	8.5m	
6	122m	6.5m	
7	61m	4.5m	
8	107m	3.5m	
9	40m	3.5m	
10	100m	4.5m	
11	100m	5.5m	
A	120m	4.0m	
B	50m	4.0m	
C	65m	4.0m	

Generally, vessels up to 305m in length and 11m draft can be accommodated alongside.

An offshore oil terminal berth, consisting of several mooring buoys, is situated about 0.6 mile WSW of the head of Molhe 2. A submarine pipeline extends SSE from the berth to the S shore of the bay. The berth can accommodate tankers up to 53,000 dwt, 236m in length, and 11m draft.

There is a repair yard and a new pier which can handle vessels up to 6,000 dwt including fishing and oil exploration craft.

Aspect.—Ilheu dos Passaros was previously described in paragraph 8.61.

The land behind the NE and E parts of the bay is composed of a series of brown and barren ridges, and dominated by Monte Vigia, 302m high. The S part of the bay is low, sandy, and backed by isolated dunes. The land rises inland W of this low shore to a mountainous crest which terminates seaward at Morro Branco.

Conspicuous landmarks include Fortim d'El-Rei, a prison standing on a hill close E of the root of the breakwater; several silos standing close NW of the prison; and a group of oil tanks standing on the S shore of the bay.

A lighted range, shown occasionally, aids in the approach to the offshore oil berth. The range marks have been reported (1990) difficult to identify.

Pilotage.—Pilotage is compulsory for all vessels entering the harbor for anchoring or berthing. Vessels should send an ETA at least 48 hours in advance through Sao Vincent (4DA). Pilots should be contacted on VHF channel 16, 2 hours before arrival and will board about 0.8 mile SW of Ilheu dos Passardos.

Anchorage.—Anchorage may be obtained, in a depth of 20m, about 1.3 miles ENE of Ponta do Morro Branco, or in a depth of 22m, about 0.5 mile ENE of Ponta do Morro Branco. The holding grounds are good, but vessels should be prepared for violent squalls during NE winds. There are no restrictions on size for vessels anchoring here.

A quarantine anchorage, with a depth of 18m, lies 1 mile ESE of Ponta do Morro Branco.

Caution.—A dangerous wreck lies about 0.5 mile SSW of Ponta Joao Ribera.

A wreck, with a depth of 2.7m, lies about 0.3 mile S of the head of Molhe 2.

A bank, with depths of less than 5m, fronts the city and several mooring buoys are situated on its W side.



Porto Grande (Mindelo)

Several stranded wrecks are reported to lie along the SE shore of the bay and a ruined pier fronts the S part of the city.

Sharks frequent the bay and boat sailing is considered to be dangerous due to the heavy squalls off the high land.

Several disused submarine cables lie N of Ponta do Morro Branco and may best be seen on the chart.

8.63 Ponta da Coluna (16°55'N., 25°00'W.), located 0.6 mile NE of Ponta Joao Ribeiro, is high and steep. A conspicuous rock, resembling a column, lies at its extremity.

Baia de Salamanza is entered between Ponta Joao d'Evora, located 1.7 miles ENE of Ponta da Coluna, and Ponta da Doca, 1.8 miles E. A village, with a prominent church, is situated at the head of this bay, behind a steep-to beach.

Ponta da Doca is formed by the W end of a broad promontory. Morro Salamanza, 84m high, stands 1 mile S of the point.

Ponta do Recanto da Prainha (16°55'N., 24°56'W.), the N extremity of the island, is located 0.7 mile E of Ponta da Doca. It is formed by the N end of the broad promontory and is fronted by rocks.

Baia do Norte is entered between Ponta do Marigoa, located 1.2 miles SE of Ponta do Recanto da Prainha, and Ponta do Calhau, 3.5 miles SE. Baia das Gatas, a small inlet, lies on the NW side of this bay, 0.7 mile SSW of Ponta do Marigoa. It has a depth of 2.7m in the entrance.

Ilha de Santa Luzia

8.64 Canal de Santa Luzia, 4.5 miles wide, separates **Ilha de Santa Luzia** (16°47'N., 24°46'W.) from Ilha de Sao Vicente and has general depths of at least 20m. With a fresh wind and the tidal current setting to windward, there is an appearance of shoal water in this channel. The tidal currents set NE and SW and are strong; rates of up to 3.6 knots have been observed.

Ilha de Santa Luzia is high in its NW and central parts. Monte Topona, 395m high, is the summit of the island and rises near the center. Monte Agua Doce, 315m high, stands in the NW part and is conspicuous.

The E part of the island is low except for Monte Creoulo, 85m high, standing near the E extremity. There are no permanent inhabitants on the island, but it is reported that fishermen, with local knowledge, visit here from Ilha de Sao Vicente.

Ponta dos Piquinhos (16°48'N., 24°47'W.), the N extremity of the island, is low, rocky, and fronted by above-water rocks.

Ponta da Praia, located 1.6 miles SSW of Ponta dos Piquinhos, is low, rocky, and steep-to. It is easily recognized as it borders the NW side of Praia do Palmo a Tostao, a large beach of white sand which extends 1.5 miles ESE.

Ilheuzinho (Guisinho), 12m high, is located 0.4 mile off the SE end of the beach. A shallow rock lies close NW of this pinnacled islet.

Anchorage can be obtained, in a depth of 15m, crushed shell and sand, about 0.2 mile offshore, 0.3 mile NW of Ilheuzinho. Another good berth is in a depth of 18m, fine sand and crushed shell, about 0.5 offshore, 0.5 mile SE of Ilheuzinho.

The S coast of the island should be given a berth of at least 2 miles due to the presence of rocks and shoal water.

Ponta Mae Grande, the E extremity of the island, is located 6.5 miles SE of Ponta dos Piquinhos. It is low and fronted by

rocks. Ponta Salina do Crioulo, located 0.6 mile NNW of Ponta Mae Grande, may easily be identified by several prominent white patches on its face.

Ilheu Branco

8.65 A channel, 4 miles wide, lies between Ilha de Santa Luzia and **Ilheu Branco** (16°40'N., 24°41'W.). Vessels should navigate in its middle part in order to avoid the shoal depths lying off the S coast of Ilha de Santa Luzia and extending NNW of Ilheu Branco.

The tidal currents in this channel are often strong and produce rough seas when they set against fresh winds.

Ilheu Branco is high and almost inaccessible except in very good weather. Topa da Berta, 327m high, stands near the center of the island and is the summit, but this mountain is not prominent. The steep slopes on the NE and SW coasts of the island are marked by large light spots. These are formed by the accumulation of sand and are visible from a great distance.

Ponta Delgada, the low SE extremity of the island, is located 1 mile SE of Topa da Berta and a reef extends E from it. Ponta dos Papagaios de Riba, the NE extremity of the island, terminates in a prominent cliff, 1 mile NW of Topa da Berta.

Ilheu Raso (Ilheu Razo)

8.66 A channel, 3.2 miles wide, lies between Ilheu Branco and **Ilheu Raso** (Ilheu Razo) (16°37'N., 24°35'W.). Vessels, in order to avoid depths of less than 20m, should give Ilheu Branco a berth of 1.5 miles and Ilheu Raso a berth of 1 mile.

The tidal currents in this channel are often strong and produce rough seas when they set against fresh winds.

Ilheu Raso consists of a wide plain bordered by cliffs and is almost inaccessible. A number of small hills rise in the center of the island. Monte da Ribeira Ladrao, 164m high, stands near the NE coast and is the summit. Ponta Salina, the N extremity of the island, is low and fringed with rocks. Ponta da Esmargalsinho, the steep-to SE extremity, is located 1.5 miles SSE of Ponta Salina.

Ilha de Sao Nicolau

8.67 Ilha de Sao Nicolau (16°37'N., 24°20'W.), separated from Ilheu Raso by a deep and clear channel, 8.5 miles wide, is very mountainous. Monte Gordo, 1,304m high, stands in the W part and is the summit of the island. Monte Bissau, 614m high, stands near the middle of the island and is conspicuous due to its conical shape; however, this peak is often covered by cloud. The long peninsula which forms the E part of the island is composed of a mountain range, 600 to 700m high.

Ponta Calheta (Ponta Leste) (16°34'N., 24°01'W.), the E extremity of the island, is dominated by Monte Vermelho, 445m high, standing 3 miles WNW. A light is shown from a column, 3m high, standing close to the point.

The N coast of the island is inhospitable, and appears mountainous, wild, and bare. This coast is exposed to the predominant NE weather. Generally, vessels should keep a distance of 1 mile from the coast due to foul ground and rocks.

Ponta Espechim, located 20.5 miles WNW of Ponta Calheta, is the N extremity of Ilha de Sao Nicolau. It is formed by a



Preguica

cliffy promontory and surmounted by Monte Cachacinho, 676m high, which is conspicuous. Due to foul ground, vessels should keep at least 1.5 miles from this point.

Ponta do Morro, located 4 miles WSW of Ponta Espechim, is dominated by Monte Praia Branca, 436m high, standing S of it. Ponta do Galao, located 1 mile SW of Ponta do Morro, is composed of prominent vertical cliffs formed by landslides.

Ponta do Barril is located 2.8 miles S of Ponta do Galeao. A light is shown from a tower attached to a dwelling, 9m high, standing on the point.

Baia do Tarrafal (16°34'N., 24°22'W.), entered 3 miles SE of Ponta do Barril, is free from dangers and has depths of 10m lying up to about 200m from its shores. A small town stands on a point, at the head of the bay. A conspicuous white house stands 0.5 mile NNW of this point and a prominent church stands 0.2 mile E of it. A small quay is situated on the NE side of the point. Anchorage can be obtained, in a depth of 20m, about 0.3 mile NW of the town, but heavy squalls sometimes blow down the ravines on the N side of the bay.

8.68 Ponta da Vermelha (16°29'N., 24°19'W.), the S extremity of Ilha de Sao Nicolau, is cliffy and formed by the S end of a small peninsula.

Preguica (16°34'N., 24°17'W.) (World Port Index No. 45890), a small port, is situated 5 miles NNE of Ponta da Vermelha. It is entered between Ponta do Topo and Ponta do Bodegal, 0.7 mile NE, and sheltered from winds from the WSW through N to NE.

The town of Preguica appears conspicuous along this barren stretch of coast. A prominent white house stands in the N and highest part of the town; the ruins of a fort are situated close E of it, at the top of a cliff. A light (Porto Velho) is shown from a column, 6m high, standing about 0.3 mile W of Ponta do Bodegal. An airfield is situated 1.7 miles NNW of the town.

A stone quay and a short mole front the town and are used by coasters. Anchorage can be obtained, in a depth 27m, fine sand and crushed shell, about 0.2 mile offshore, SSE of the light. Small vessels can anchor closer in. Local knowledge is advised. The roadstead is only suitable for vessels of not more than 100m in length and for only one vessel at a time.

Ilha do Sal

8.69 Ilha do Sal (16°49'N., 22°55'W.), the NE island of the Arquipelago de Cabo Verde, consists mainly of a flat terrain with isolated peaks. The S part of the island is very low and terminates in a dangerous spit. The main harbors are Santa Maria, Pedra Lume, and Palmeira.

The principal peaks include Monte Grande, 407m high, standing near the NE extremity of the island; Monte Rocha da Salina, 299m high, standing 2.2 miles S of Monte Grande; and Morro Leste, 263m high, standing near the NW extremity of the island.

An airport is situated near the center of the island and an aeronautical light is shown occasionally from its vicinity. The control tower is conspicuous and visible from seaward, except when obscured by mountains.

An aeronautical radiobeacon, with prominent masts, is situated on Monte Rabo de Junco. This prominent hill, 164m high, stands near the head of Baía da Mordeira.

8.70 Ponta Norte (16°51'N., 22°56'W.), the N extremity of the island, is low, rocky, and fronted by submerged rocks. A disused light tower stands 0.5 mile SE of the point.

Ponta da Casaca is located 2 miles SE of Ponta Norte and an islet lies close inshore, 0.3 mile WNW of this point.

Ponta do Cagarral is located 3.5 miles SSE of Ponta da Casaca and a shallow ledge of rocks extends up to about 0.5 mile NE of it. A prominent conical hill, 172m high, stands close WNW of the point.

Ponta de Guine, low and rocky, is located 0.7 mile SSW of Ponta da Cagarral and a prominent cross stands on a hill close WNW of it.

Porto de Pedro Lume (16°45'N., 22°54'W.) is situated 0.5 mile W of Ponta da Guine and is used by coasters. A breakwater shelters a small boat harbor; cargo is worked at the anchorage by lighters.

A prominent church stands near the center of the town and the metal towers of a salt cableway can be seen amongst the houses. A water tower stands near the S end of a beach, 0.7 mile W of Ponta de Guine.

A light is shown from the head of the breakwater; however, it has been reported (1994) that the light no longer exists, although the light tower remains. A range, maintained by the salt works company, is shown on request.

Baixona, a rocky shoal with a depth of 6.3m, lies about 0.3 mile SSW of Ponta da Guine and the sea breaks on it. A shoal, with a depth of 2m, lies about 0.5 mile WSW of Ponta da Guine and a spit, with depths of less than 4m, extends about 0.3 mile S from a point on the shore, 0.5 mile W of Ponta da Guine.

Anchorage may be obtained, in a depth of 12m, sand, stone, and shells, about 0.4 mile S of the breakwater head, or in a depth of 11m, about 0.3 mile S of the breakwater head.

8.71 Ponta do Morrinho Vermelho (16°48'N., 24°47'W.) is located 5.5 miles S of Porto de Pedra de Lume. The coast between is bordered by submerged rocks. Baixa Alta, with a depth of 8.2m, lies 1.3 miles offshore, 3 miles SSE of Porto de Pedra de Lume and is the outermost danger. Ponta do Morrinho Vermelho is low but is backed by a hill, 81m high.

Ponta da Fragata, located 1.7 miles SW of Ponta do Morrinho Vermelho, is fronted by a rocky islet. A shoal, with a depth of 7.4m, lies about 0.8 mile E of the point.

Serra Negro, 99m high, stands close SW of the point.

Ponta do Leme Velho, located 3 miles S of Ponta da Fragata, is the SE extremity of the island. It is low, dark, and bordered by rocks. A detached patch, with a depth of 13.1m, lies about 1.2 miles SSE of this point.

Ponta do Sino (16°35'N., 22°56'W.), located 2 miles W of Ponta do Leme Velho, is formed by a low sandy promontory composed of dunes.

A light is shown from a tower, 9m high, standing 0.2 mile inland of the point and is obscured on some bearings.

Baixo do Sino, a steep-to and rocky spit, extends about 0.2 mile SE of the point and should be given a wide berth.

Porto de Santa Maria (16°36'N., 22°54'W.) is situated within the bay lying between Ponta do Leme Velho and Ponta do Sino. It is used by coasters to load salt from lighters. Santa Maria, the principal town of the island, stands at the head of this bay. Anchorage, with good holding ground, can be taken in mostly any part of this bay depending upon the draft and size of the vessel. A good berth is in a depth of 13m, clay and shells, about 0.3 mile S of the town. Local knowledge is advised.

Baía da Mordeira (16°48'N., 24°47'W.), located 6 miles NNW of Ponta do Sino, is entered between Ponta do Rife and Ponta Pesqueirona, 3.5 miles NW. This bay affords good anchorage except during the rainy season, when S winds blow into it and are accompanied by rollers. The depths within the bay deepen gradually seaward and the bottom consists of fine sand and shells with several rocky spots.

Caution.—Due to the existence of submarine cables, a prohibited anchorage area extends SW from the head of the bay and may best be seen on the chart. This area greatly limits the roadstead within the bay.

Ponta do Rabo de Junco (16°42'N., 22°59'W.) is located 0.4 mile NW of Ponta Pesqueirona. An islet lies 0.3 mile off the point and is joined to it by a reef.

Ponta do Fontona is located 2.5 miles N of Ponta do Rabo de Junco. The coast between is steep and fronted by rocks.

8.72 Baía da Palmeira (16°45'N., 22°59'W.) is entered between Ponta da Fontana and Ponta do Joaozinho, 1 mile NNW. It is occupied by an airport fuel terminal and the village of Palmeira stands in the N part.

Tides—Currents.—Tides rise 1.2m at springs and 1m at neaps.

Depths—Limitations.—An offshore oil terminal berth, consisting of four mooring buoys, lies in a depth of 14m, in the center of the bay. A submarine pipeline extends NE from the berth to the NE shore of the bay.

From April through November, tankers up to 183m in length, 21m beam, and 12.5m draft can be handled. Due to heavy swells from December through March, tankers up to 175m in length, 21m beam, and 11.5m draft can be handled.

A pier, 112m long, extends SE from the N part of the bay and has depths of 1 to 4m alongside, but only one side is available for berthing.

Aspect.—A group of oil tanks stands close E of the village, in the NE part of the bay. A fish freezing plant stands close NNW of the root of the pier. Casa Valente is situated 0.3 mile ESE of the oil tanks. It is easily identified, as a tree with a prominent rounded top, the only one of its kind in the area, stands within the walls.

A lighted range, which is shown on request, indicates the position of the submarine pipeline and the approach to the offshore oil berth.

Pilotage.—Pilotage is compulsory. Vessels should send an ETA at least 48 hours in advance and contact the terminal on VHF channel 13 or 16 when within 40 miles. A pilot and a mooring master will board about 1 mile W of the mooring buoys. Pilots are stationed at Porto Grande and travel as required.

Anchorage.—Small vessels anchor under the lee of the pier. Larger vessels anchor, in a depth of 31m, about 0.3 mile SW of the oil berth.

Caution.—It is reported that a floating fish farm lies close to the shore in the N part of the bay.

From December to March, the terminal may occasionally close due to heavy swells.

During winter months, berthing at the offshore berth is difficult with S to NW winds.

Ponta Nha Gertrude (16°49'N., 23°00'W.) is located 3.5 miles N of Baía da Palmeira. Morre Leste, 263m high, stands 0.7 mile ESE of the point and is conspicuous.

Ponta Preta, the highest point on the NW coast of the island, is located 1 mile NNE of Ponta Nha Gertrude. Ponta Palhona, located 2.3 miles NW of Ponta Preta, is low, rocky, and fronted by a reef. Ponta Norte, previously described in paragraph 8.70, is located 2 miles ENE of Ponta Palhona. The coast between is fronted with rocks.

Ilha da Boa Vista

8.73 Ilha da Boa Vista (16°05'N., 22°50'W.), located 12 miles S of Ilha do Sal, is mainly flat with a group of mountains which extend across the island in a N/S direction.

Monte Cacador, 355m high, and Pico Forcado, 369m high, stand in the E part of the middle of the island and are conspicuous; Pico Estancia, 390m high, stands in the SE part of the island and is the highest peak; Monte Calhau, 326m high, stands isolated and prominent in the NE part of the island; and Santo Antonio, 378m high, and Rocha Estancia, 354m high, stand in the SW part of the island.

The coasts of the island are low and mainly consist of long, sandy beaches which are separated by rocky points with detached dangers lying close off them. Salt pans are located close to the E extremity of the island.

Caution.—Local magnetic anomalies are reported to exist off the E coast and the S extremity of the island.

8.74 Ponta do Sol (16°14'N., 22°57'W.), the NW extremity of Ilha da Boa Vista, is low, rocky, and always marked by breakers. A light is shown from a tower, 7m high, standing on the point. Monte Vigia, 146m high, stands 1.2 miles S of the point and is prominent. Foul ground extends up to 0.5 mile N of the point, but depths over 20m lie about 1 mile N and NW of it.

Baía de Sal Rei is entered between Ponta Joao Gomes, located 3 miles S of Ponta do Sol, and Ponta Laginha, 5.5 miles SSW. Ilheu de Sal Rei, a low and grass-covered islet, lies on the outer edge of an area of foul ground which extends 1 mile SW from Ponta Joao Gomes. The ruins of a fort stand at the SE extremity of this islet and a light is shown from a mast, 8m high, standing on the NW part.

Baixo do Chave lies midway along the shore of the bay and consists of a chain of rocks, awash, and drying rocks which extend up to 0.4 mile seaward. This chain of rocks divides the bay into two parts, Porto do Sal Rei to the N and Porto da Chave to the S.

Baixona, a reef, lies 1 mile S of the light structure on Ilheu de Sal Rei. It has a least depth of 2.5m and the sea frequently breaks over it.

Porto do Sal Rei (16°09'N., 22°57'W.) lies in the N part of the bay. It provides sheltered anchorage, but is exposed to NW swells from November to April. The village of Sal Rei is situated on the shore, close SE of Ponta Joao Gomes, and is fronted by a wharf used by small craft.

A conspicuous chimney stands near the shore, 2.7 miles S of the village and a prominent stranded wreck lies close inshore, 1 mile N of it. The small town of Rabil, with two prominent towers, is situated 1 mile E of the chimney.

It is reported that a light (Ribeira de Rabil) is shown from a point near the shore, about 1 mile N of the chimney.

Good anchorage can be obtained, in a depth of 14m, crushed shells, about 0.7 mile SSE of the SE extremity of Ilheu de Sal Rei. Large vessels can anchor farther out, but the holding ground is poor. The bottom generally consists of rock covered by a thin layer of sand or shell, which may cause the anchor to drag.

Baixo do Bartola, with a least depth of 6.3m, lies in the S approach to Porto do Sal Rei, about 2 miles NW of Ponta Laginha.

Porto da Chave, in the S part of the bay, is sheltered; anchorage may be obtained according to draft.

8.75 Ponta do Morro da Areia (16°05'N., 22°59'W.), located 1.2 miles SW of Ponta Laginha, is low and rocky. It is dominated by Morro da Areia, 167m high, standing 0.8 mile ESE.

Baixo da Estancia, with a depth of 19.6m, and Baixo Vauban, with rocks awash, lie 3 miles WNW and 1.2 miles WSW, respectively, of Ponta do Morro da Areia. Both of these dangers should be given a wide berth.

Ponta Varandinha, the W extremity of the island, is located 2.5 miles SSW of Ponta do Morro da Areia. It is low, rocky, and a reef, awash, extends 0.5 mile W of it.

A light is shown from a structure, 7m high, standing on the point. A racon is situated at the light.

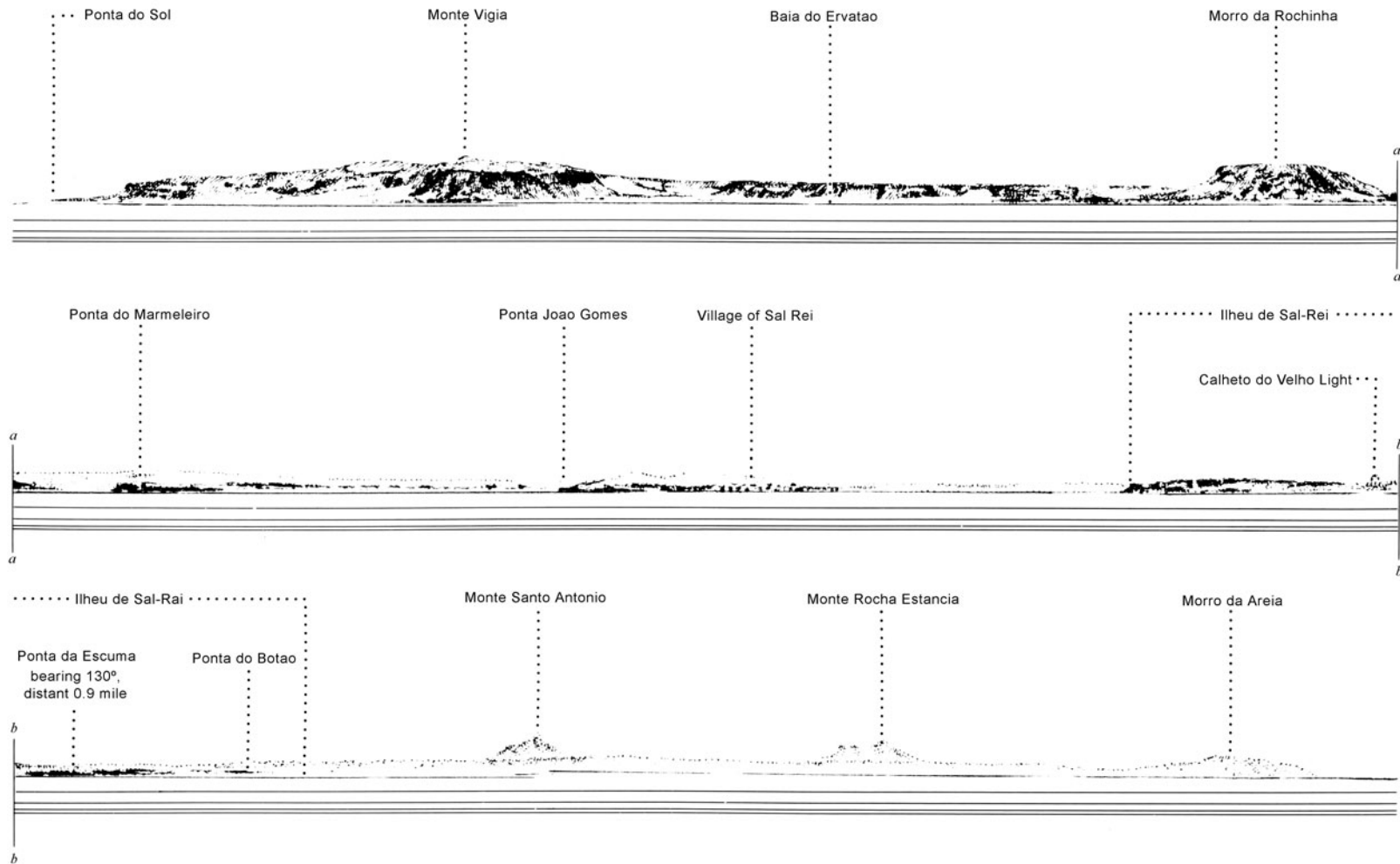
From Ponta Varandinha, the coast trends 6.5 miles SE to Ponta Lacacao and then 4.7 miles E to Ponta Tarafo, the S extremity of the island. It is mostly low and sandy. Anchorage can be taken off Praia do Curralinho, which is located 1.5 miles NW of Ponta Lacacao. This roadstead has depths of over 10m lying within 0.2 mile of the shore and depths of 20m lying about 1 mile offshore.

Ponta Tarafo is bordered by foul ground, which extends up to 0.8 mile S, and should be given a berth of at least 1 mile. A small islet, capped with guano, lies 0.3 mile ENE of the point.

Enseada do Curral Velho, entered between Ponta Tarafo and Ponta Medronho, 3 miles NE, provides good anchorage. A good berth lies 1 mile NE of Ponta Tarafo, where depths of 10m are found 0.3 mile offshore.

Baixo Queen, an extensive reef over which the sea frequently breaks, lies 0.5 mile offshore, 5.7 miles NE of Ponta Tarafo.

8.76 Ponta do Roque (16°05'N., 22°42'W.), the E extremity of Ilha da Boa Vista, is high, dark, and conspicuous. A



View, in three parts, of Ilha da Boa Vista

small islet lies close N of this point and Baixo do Roque, with a least depth of 7.4m, lies about 0.7 mile ESE of it.

Morro Negro, dark and isolated, stands 1.3 miles NW of the point. This hill, 154m high, is conspicuous. A light is shown from a tower, with a dwelling, 12m high, standing on the summit.

Baixo Queen and Ponta do Roque should be given a berth of at least 1.5 miles.

Ponta do Porto Ferreira is located 2.5 miles N of Ponta do Roque and an islet lies close off it. The coast between these two points should be given a berth of at least 2 miles.

A detached patch, with a depth of 17m, lies about 2.7 miles E of Ponta do Porto Ferreira.

Small coasters which load salt can obtain anchorage, in a depth of 8m, about 0.3 mile S of Ponta do Porto Ferreira, but local knowledge is required.

Ponta do Rife Baluarte, located 1 mile N of Ponta do Porto Ferreira, is low and fronted by rocks which extend up to 1 mile seaward. Ilheu do Baluarte lies 1 mile NE of the point. This islet is reported (1968) to be marked on its E side by the remains of a stranded wreck which stands higher than the islet.

Ilheu Holandes and Baixo de Fora lie 2 miles NNW and 1.7 miles N, respectively, of Ilheu do Baluarte. A patch, with a depth of 19m, lies 3.2 miles offshore, about 1 mile ENE of Baixo de Fora. It is the outermost danger off the NE part of the island.

Ponta Rodrigo, the NE extremity of Ilha de Boa Vista, is located 3.8 miles NW of Ponta do Rife Baluarte. This point is low, fringed by rocks, and fronted by foul ground which extends up to 0.8 mile E of it. A small bay, encumbered with rocks, is located close W of the point and an islet lies in the entrance.

Caution.—The sea constantly breaks on the dangers lying off the NE side of the island. Several vessels have been set onto these dangers by the SW current. In clear weather, these dangers may be seen, but in poor visibility, it is not advisable to approach the island as the currents close inshore are sometimes irregular.

8.77 Ponta Antonia (16°14'N., 22°50'W.), located 5 miles WNW of Ponta Rodrigo, is low, dark, and rocky. It is fronted by foul ground which extends up to 0.5 mile seaward. A rock, awash, lies about 0.5 mile NE of the point.

Baia de Salina is entered between Ponta Antonia and Ponta do Sol, 7 miles W. It has a sandy shore, but is encumbered with reefs which extend up to 2 miles offshore. The coast in this vicinity should be given a wide berth.

Caution.—**Baixo Joao Leita**o (Baixo de Joao Valente) (15°49'N., 23°09'W.) lies 17 miles SW of Ilha da Boa Vista. It mainly consists of coral and shell and is awash. The sea almost always breaks over this shoal bank in moderate weather, but not when it is calm.

Numerous fishing vessels may be encountered in the vicinity of this shoal bank.

Ilha de Maio

8.78 Ilha de Maio (15°15'N., 23°10'W.), located 43 miles SSW of Ilha da Boa Vista, has generally low coasts with a few scattered and conspicuous peaks.

Monte de Santo Antonio, 252m high and isolated, stands in the N part of the island; Monte Penoso, 436m high, stands on the E side of the island and is the highest peak; and Monte Batalha, 294m high, stands on the W side of the island.

When seen from the SE at a distance of about 15 miles, the island appears as a group of islets.

Vessels navigating along the NW and W coasts of the island should remain in depths of over 20m by giving the points along the shore a berth of at least 1.2 miles.

Ponta Cais (15°20'N., 23°12'W.), the N extremity of Ilha da Boa Vista, is low and generally dark in color. It is bordered by detached rocks over which the sea normally breaks. A light is shown from a structure, 7m high, standing close E of the point. A racon is situated at the light structure.

Baixa Rasa, a shoal bank with a depth of 16.5m, lies about 2.8 miles WNW of Ponta Cais. A sandy bank, with least depths of 80m, extends up to 10 miles N of the point.

A rocky bank, with a least depth of 35m, lies about 15 miles WNW of Ponta Cais.

Vessels navigating N of the island are advised to remain at least 4 miles NE and NNE of Ponta Cais.

Baixo Galeao, a group of dangerous rocks, lies about 1 mile N of Ponta Pipa, a narrow point located 1.2 miles E of Ponta Cais. The sea breaks constantly on this danger.

Ponta Pedrenau is located 2.7 miles ESE of Ponta Pipa. The bays lying between are foul. A reef extends up to 0.5 mile N of Ponta Pedrenau.

Ponta dos Flamengos is located 9 miles SSE of Ponta Pedrenau. The coast between is fronted by foul ground which extends up to 0.5 mile offshore.

Ponta da Poca Grande is located 5 miles SW of Ponta dos Flamengos and a reef, with depths of less than 2m, extends 0.5 mile S of it.

Ponta das Casas Velhas, located 2.3 miles W of Ponta da Poca Grande, is fringed by rocks and a river flows into the sea close W of it. A reef extends 0.3 mile SSE from the point and the sea usually breaks over it.

A dangerous wreck is reported to lie about 0.8 mile S of Ponta da Poca Grande and an isolated shoal, with a depth of 27m, is reported to lie 2.5 miles SE of Ponta das Casas Velhas.

Ponta Preta, the E entrance point of Porto Ingles, is located 1.5 miles WNW of Ponta das Casas Velhas. A rocky spit, with depths of less than 10m, extends 0.5 mile S from the point.

8.79 Porto Ingles (Porto do Maio) (15°08'N., 23°13'W.) is entered between Ponta das Salinas and Ponta Preta, 1.7 miles SE, and is sheltered from the prevailing NE winds. Swells from the S and SE occur from June to October and rough seas occasionally prevent the landing of persons or freight in August or September.

The town of Porto Ingles is situated on a low cliff at the head of the bay. A large, conspicuous church stands in the town and Forte de Sao Jose, from which a light is shown, is situated at the S end of the town.

The shore lying between Ponta das Salinas and the town is fronted by a steep-to and sandy beach, except for Baixinha, a rocky spit, which has depths of less than 10m and extends 0.3 mile seaward from a point located 0.2 mile W of the town. A wooden pier is situated midway along the beach. Low cliffs,

fringed by rocks, border the shore from the town to Ponta Preta which is high and rocky.

Anchorage may be obtained, in a depth of 24m, about 0.3 mile SW of Forte de Sao Jose, or closer inshore in a depth of 12m, about 300m from the shore. Anchorage may also be obtained, in a depth of 12m, about 250m SW of the wooden pier. Local knowledge is advised.

Caution is necessary when approaching the anchorage as the depths increase rapidly off the town.

Ponta do Osso da Baleia (15°13'N., 23°14'W.) is located 4.5 miles N of Ponta das Salinas. The coast between is formed by a low sandy beach. The village of Calheta stands 1 mile NE of the point and its white houses are prominent from seaward.

From Ponta do Osso da Baleia, the coast trends 3.2 miles N to Ponta do Morrinho and then 4.7 miles NE to Ponta Cais. The bays which lie along this stretch of coast are, for the most part, encumbered by foul ground and rocks.

Ilha de Sao Tiago

8.80 Ilha de Sao Tiago (Ilha de Santiago) (15°03'N., 23°40'W.), located 14 miles WSW of Ilha de Maio, is the largest and most populous island of the Arquipelago de Cabo Verde. It is also the most important from a commercial and agricultural viewpoint.

The island is very mountainous. Pico da Antonio, 1,392m high, stands near the center and is the summit of a range which traverses the island from NNW to SSE. Monte Graciosa, 643m high and isolated, stands in the N part of the island and is very conspicuous.

Ponta de Lobo (Ponta San Lorenzo) (15°00'N., 23°26'W.), the E extremity of Ilha de Sao Tiago, is low and fronted by a reef which is normally marked by breakers. A light is shown from a tower, with a dwelling, 8m high, standing on the S part of the point.

Ponta das Bicudas is located 5.7 miles SW of Ponta do Lobo. The coast between mostly consists of steep cliffs. Monte do Facho, 140m high and isolated, stands 1.5 miles N of the point and is very prominent.

8.81 Porto da Praia (14°55'N., 23°31'W.) (World Port Index No. 45910), entered between Ponta das Bicudas and Ponta Temerosa, 1.5 miles WSW, is the principal anchorage roadstead of the island.

The city of Praia, the capital of the island, is situated on a plateau at the head of the bay. This prominent plateau, 30m high, has steep sides with deep ravines at each end.

Winds—Weather.—The bay is sheltered, for the most part, from winds from the W through N to NE. However, it is exposed to S and SW swells which are frequent from June to October. Strong winds blow over the land during the dry season, December to June, but the anchorage is generally safe. With strong NE winds, the NE shore of the bay affords little protection and a considerable swell may develop.

Tides—Currents.—Tides rise 1.3m at springs and 1.1m at neaps.

The tidal currents are normally weak.

Depths—Limitations.—Cais Novo mole extends 300m SSW from the shore of the bay, 1 mile WNW of Ponta das

Bicudas. A quay extends NW from the root of this mole. There is 690m of total berthing space, with depths of 5 to 9m alongside.

Aspect.—The N shore of the harbor is high and cliffy.

Ilheu de Santa Maria lies at the W side of the bay and is connected to the shore by a reef. The islet is 16m high and flat-topped. A shallow wharf is situated on the W side of the islet and a disused light stands at the S extremity.

The custom house, a prominent two-story building, stands at the S end of the city. Conspicuous radio masts stand 0.5 mile W and 1.2 miles N of the N end of Ilheu de Santa Maria.

It was reported (1987) that two prominent towers stand close NE of the root of Cais Novo mole.

A light (Dona Maria Pia) is shown from a tower attached to a dwelling, 21m high, standing on Ponta Temerosa.

Pilotage.—Pilotage is compulsory for berthing. Vessels should send an ETA at least 24 hours in advance and contact the pilot on VHF channel 13 or 16, 2 hours before arrival. Pilots board E of Ponta Temerosa.

Anchorage.—Vessels of any size can anchor in the bay. A good berth lies in a depth of 16m, about 250m S of the head of the mole. Small vessels may anchor, in a depth of 6m, about 0.3 mile SE of the T-head pier which fronts the custom house.

Caution.—Foul ground, with a least depth of 9m, extends up to 0.2 mile S of Ponta Temerosa.

8.82 Ponta Grande da Cidade (14°54'N., 23°38'W.) is located 6.5 miles W of Ponta Temerosa. The coast between is fringed with rocks and several floating shellfish farms are reported to lie along the shore.

Monte Vermelho, standing 1.5 miles, WNW of Ponta Temerosa, is a reddish color and very conspicuous. A prominent radio mast is reported to stand 3.5 miles E of Ponta Grande da Cidade.

Cidade Velha is situated at the lower end of a ravine, 1 mile E of Ponta Grande da Cidade. Anchorage, with local knowledge, may be obtained, in depths of 14 to 26m, off this town.

It is reported (1994) that a light is shown from a point on the coast, 4.5 miles NW of Ponta Grande da Cidade.

Ponta da Janela (15°04'N., 23°47'W.), the W extremity of Ilha de Sao Tiago, is located 13 miles NW of Ponta Grande da Cidade. This point is dark and steep, but can easily be recognized from the N or S by a rock in the shape of a column lying close off it. The coast between is high and mostly cliffy, with a few indentations in which some houses may be seen. Baia de Santa Clara, entered 4.5 miles SE of Ponta Janela, is very deep and bordered by steep cliffs.

Porto da Ribeira da Barca, entered 3.7 miles NNE of Ponta da Janela, is the N of two small bays. A village stands at the head of this bay and is fronted by a pier used by small craft. A light is shown from a tower, 3m high, standing on a building in the village.

Ponta de Chao Bom is located 7.2 miles N of Porto da Ribeira da Barca. Baia de Chao Bom is entered between this point and Ponta da Ribeira da Prata, extending 2 miles S. The village of Prata stands on a plateau near some cliffs, at the S end of the bay.

Ponta do Atum is located 1.3 miles N of Ponta de Chao Bom. This point is rocky and a reef extends 200m W from it.



Dona Maria Pia Light (Porto da Praia)

Baia do Tarrafal (15°17'N., 23°46'W.) is entered between Ponta do Atum and Ponta Preta, 1.2 miles NW.

Ponta Preta consists of a high cliff with a group of black rocks lying at the base. It is bordered by a rocky reef, with a least depth of 5m, which extends about 300m seaward. A light is shown from a hut, 6m high, adjoining a building with a brown roof, standing close SE of the point.

Ilheu dos Cuscuz, a rocky islet, is located 0.4 mile ENE of Ponta do Atum. It is connected to the shore by a sandy isthmus and a rock, with a depth of 8.8m, lies 0.3 mile WNW of it. A group of rocks, with a least depth of 2.7m, lies up to 200m W of this islet.

A small pier, marked by a light, extends NE from the shore, 300m SW of Ilheu dos Cuscuz. The main part of the village of Tarrafal, with a prominent church, overlooks this pier.

Anchorage can be obtained, in a depth of 15m, chalk, about 0.2 mile W of Ilheu dos Cuscuz. Larger vessels may anchor farther WNW in good holding ground.

8.83 Ponta Moreia (15°20'N., 23°45'W.), the N extremity of Ilha de Sao Tiago, is located 3 miles NE of Ponta Preta. This point is high, rocky, and steep. The coast between consists of three bays, all of which are foul.

A light is shown from a hut, 4m high, standing on the point..

From Ponta Moreia, the coast trends 1.7 miles E to Ponta Bicuda and then 14.3 miles SE to Ponta de Santa Cruz. The greater part of the coast is cut by a wide network of valleys which extend NE and terminate in beaches of black sand or gravel, between cliffs.

Ponta de Santa Cruz is low, rocky, and inconspicuous from the NW or SE. The point may be identified by a group of above-water rocks which extends up to 0.5 mile N of it.

Porto de Pedra Badejo, a cove, is located 1.7 miles SE of Ponta de Santa Cruz and entered between Ponta da Coroa and

Ponta de Pedro Badejo, 1.5 miles WNW. The town of Santiago (Pedra Badejo), with a prominent church, is situated in the NW part of the cove.

Anchorage, with local knowledge, can be taken, in a depth of 13m, sand, about 300m SE of Ponta de Pedro Badejo.

Ponta da Coroa, the S entrance point, is low and shallow depths, over which the sea normally breaks, lie up to 0.7 mile NE of it.

Ponta da Achada da Baleia is located 6 miles SE of Porto de Pedra Badejo. The coast between is low and indented. From this point, the coast trends 4 miles SSE to Ponta do Lobo, which has previously been described in paragraph 8.80.

Ilha do Fogo

8.84 Ilha do Fogo (14°57'N., 24°21'W.), located 30 miles W of Ilha de Sao Tiago, is the loftiest island of Ilha the Arquipelago de Cabo Verde. Cha das Caldeiros, the principal peak stands on the E side of a large crater near the middle of the island. It is formed by a symmetrical cone, 2,829m high, and is generally obscured by clouds. The most recent eruption was in 1995.

The coasts are generally high and rugged. Several small villages stand on the slopes of the central mountain; Cidade de Sao Filiple, situated on the SW side of the island, is the main commercial center.

Off the N and NE ends of the island, the currents are strong and are mostly influenced by the wind.

Caution.—Local magnetic anomalies exist in the vicinity of the island.

8.85 Fio do Monte Vermelho (15°03'N., 24°23'W.), the N extremity of the island, consists of a high bluff which descends steeply seaward and ends in a platform of low rocks. Baixo das



Ilha do Fogo—Cha das Caldeiros

Sete Cabecas, a group of low above-water rocks, extends up to 0.4 mile NNW of the point. Depths of 100m lie 0.2 mile seaward of this group of rocks.

From Fio do Monte Vermelho, the coast trends 7.2 miles SW to Ponta da Garca, which is steep and dominated by Monte Ledo, 470m high. It then trends 4.3 miles SSW to Ponta de Vale de Cavaleiros, which is dominated by Monte Almada, 327m high. A shoal, with depths of less than 2m, lies about 0.5 mile offshore, 1.3 miles N of Ponta de Vale de Cavaleiros.

A pier extending S from close E of Ponta de Vale de Cavaleiros has a depth of 5m alongside its outer 45m. Anchorage may be obtained, in a depth of 16m, good holding ground of fine sand and mud, about 300m S of the pier head.

Porto de Sao Filipe (14°54'N., 24°30'W.) lies 1.5 miles S of Ponta de Vale de Cavaleiros. The coast between is sheer and fronted by a beach.

The town of Sao Filipe stands on top of a cliff which is bounded on its N and S sides by ravines through which rivers flow. It appears as a prominent whitish spot from offshore.

Fortim Carlota, an old fortress used as a police station, stands in the S part of the town and is marked by a light shown from a column, 4m high, standing on its W wall. A prominent church, with two spires, stands close NE of the fortress.

Anchorage may be obtained, in a depth of 17m, very good holding ground of fine sand, about 0.3 mile NW of the fortress.

Porto de Nossa Senhora da Encarnacao lies 1 mile SE of Porto de Sao Filipe. A prominent church here stands on top of the cliffs, 0.9 mile SE of Fortim Carlota. Several conspicuous

buildings are also situated at the foot of the cliffs, close W of the church.

Anchorage may be obtained, in a depth of 16m, fine sand, about 0.3 mile SW of the church.

Persons with local knowledge are available at Sao Filipe to aid vessels entering the above anchorages.

8.86 Ponta do Pescadeiro (14°49'N., 24°23'W.), the S extremity of the island, is located 8 miles SE of Porto de Nossa Senhora Encarnacao. The coast between is formed by high cliffs. A small, rocky islet lies close offshore, 2.5 miles SE of Porto de Nossa Senhora Encarnacao.

Ponta do Alcatraz (14°50'N., 24°19'W.) is located 3.5 miles NE of Ponta do Pescadeiro. The coast between consists of mostly cliffs.

A light is shown from a column, 3m high, standing close SW of the point. It is reported that during the day, the light structure can only be distinguished when near the coast.

Ponta de Sougui, low and rocky, is located 3 miles NE of Ponta do Alcatraz. The land and the shore extending up to 1 mile NW of this point were affected by lava flows during the eruption in 1951. Several villages in this vicinity were destroyed. Inland of the coast, the land rises steeply to the central mountain.

Porto dos Mosteiros (15°02'N., 24°20'W.) is located 10.2 miles NNW of Ponta Sougui. The coast between is mostly fringed by foul ground. It is entered between Ponta Manuel Dias, a low point, and Ponta Queimada, 1 mile NW. The town



Ilha do Fogo—Ponto de Vale de Cavaleiros

of Igreja stands on a low promontory at the head of the bay and beaches extend on both sides of it. Several buildings situated in the town are prominent and a conspicuous power station stands on a hill at the SE end of the town.

A light is shown from a pyramid, 3m high, standing at the NW end of a stone wall, on the seaward side of the town. A small quay used by boats is situated in an inlet entered close NE of the light.

An anchorage roadstead used by coasters lies 0.2 mile N of the light. It has a depth of 33m with a good holding ground of fine sand, but the depths increase rapidly to seaward.

The coast trends 2.8 miles WNW from Porto dos Mosteiros to Fio do Monte Vermelho, which has been previously described in paragraph 8.85. It is low and fringed with rocks, but becomes higher in the vicinity of the point.

The Ilheus do Rombo (Ilheus Secos)

8.87 The **Ilheus do Rombo** (Ilheus Secos) (14°5'N., 24°40'W.) consists of a group of six rocky islets and lies 8 miles W of Ilha do Fogo.

Ilheu Grande, the W islet, and Ilheu de Cima, the E islet, lie 2.5 miles apart but are almost connected by rocks and the other four small islets. The group is volcanic in origin and uninhabited.

Ilheu de Cima (14°58'N., 24°39'W.), a rocky islet, rises to a height of 77m near its SW extremity. A light is shown from a hut, 4m high, standing on the summit.

The N extremity of the islet should be given a berth of at least 1 mile in order to avoid several rocky shoals, some of which break continuously. The NE and SE coasts of the islet should also be given a berth of at least 1 mile.

Ilheu Grande rises to a height of 96m and should be given a berth of at least 0.5 mile.

The passage lying between this group and Ilha do Fogo, to the E, and the passage lying between this group and Ilha Brava, to the S, are both clear and deep.

Ilha Brava

8.88 Ilha Brava (14°51'N., 24°43'W.) is located 10 miles W of Ilha do Fogo. It has several high peaks, but they are generally enveloped in clouds. Fontainhas, the highest peak, rises to a height of 976m near the middle of the island.

The coasts are generally steep and safe to approach and, although rocky and precipitous, landing can be made in most parts.

Vila de Nova Sintra (Vila de Nova Cintra), the capital of the island, is situated on a plateau on the N slope of Fontainhas.

Ponta Jalunga (14°53'N., 24°41'W.), located at the NE end of the island, consists of a relatively low ledge projecting from the side of a hill and is prominent. A light is shown from a column, 8m high, standing on this point.

Ponta do Incenso is located 0.7 mile NW of Ponta Jalunga. A prominent cliff extends 0.6 mile W from this point to Ponta da Vasa and forms the N extremity of the island.



Ilha Brava

8.89 Porto da Furna (14°53'N., 24°41'W.), a small bay, lies close SW of Ponta Jalunga; the prominent village of Furna stands at its head.

A sandy beach and a shallow pier, marked by a light, front the village. The swell does not enter this bay and small vessels can obtain anchorage here. Vessels up to 60m in length generally moor with one anchor to seaward and their stern secured to the shore.

It is reported that vessels up to 100m in length have also moored in the bay using extreme care.

Persons with local knowledge are available to aid vessels when entering and mooring.

8.90 Ponta Nho Martinho (14°48'N., 24°43'W.), the S extremity of the island, is located 5.3 miles SSW of Ponta Jalunga. A light is shown from a tower, 4m high, standing on the point. A rock, with a depth of less than 2m, lies about 0.5 mile ENE of this point.

Porto da Faja, a small bay, lies on the NW side of the island, 4.2 miles NW of Ponta Nho Martinho. The village of Faja de Agua stands at the mouth of a river which flows into the NE part of this bay. A prominent church stands near its N end. The village is fronted by a sandy beach, but the shore of the bay is generally fringed by rocks.

Small vessels with local knowledge can obtain anchorage, in depths of 15 to 16m, sand, in the NE corner of the bay.